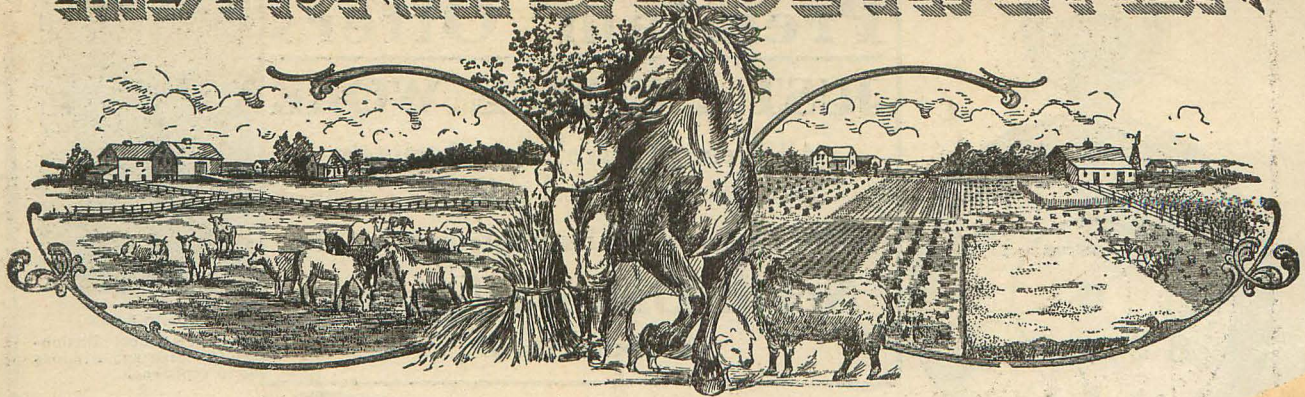


# THE NORTH DAKOTA FARMER



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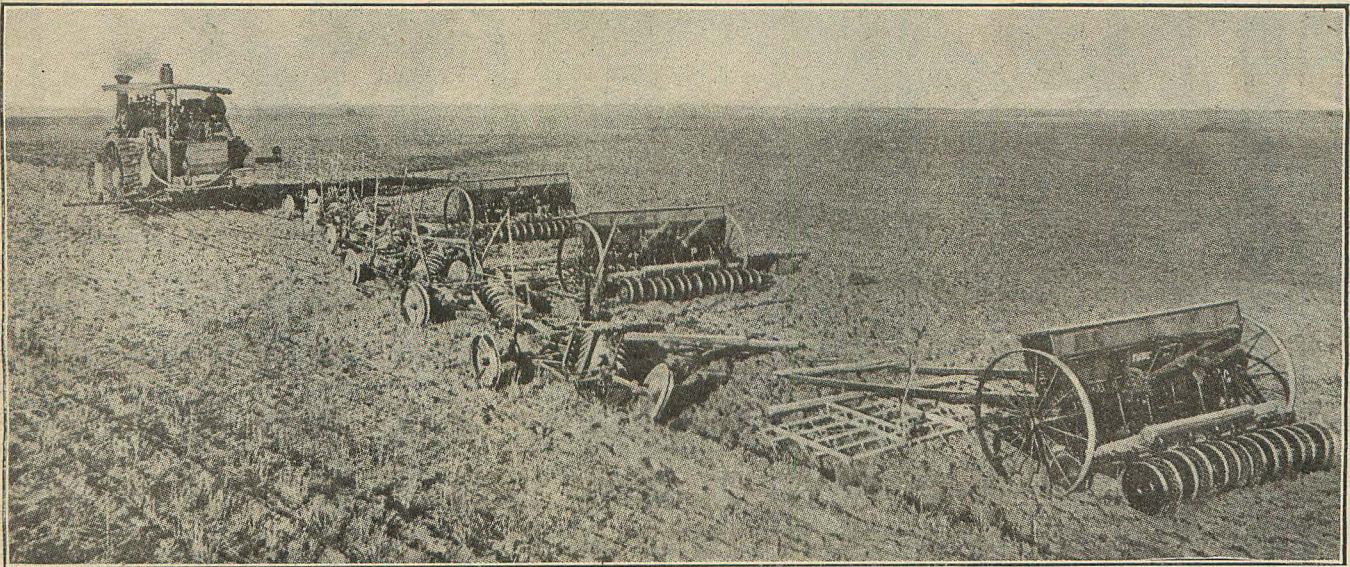
Vol. 12 · No. 9

Lisbon, North Dakota, March 15, 1911

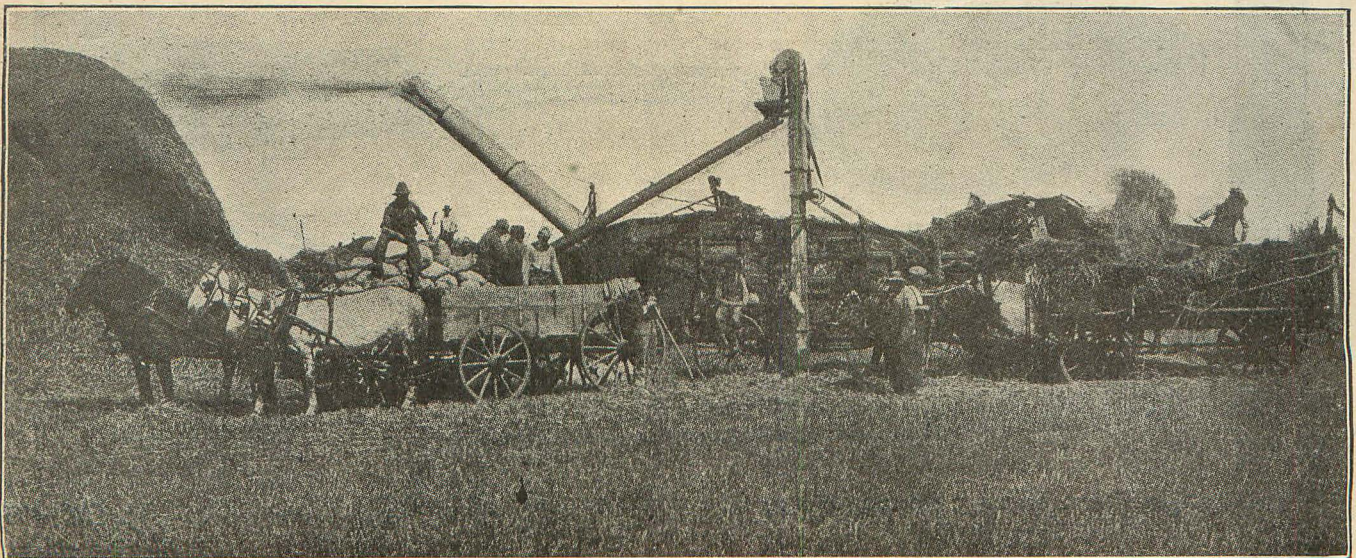
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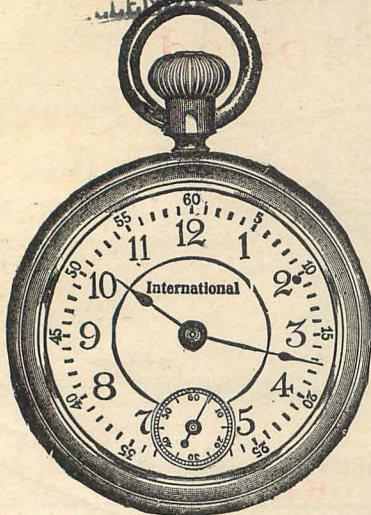
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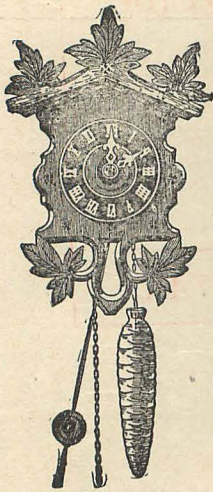
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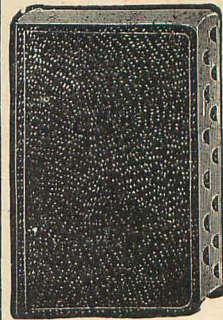


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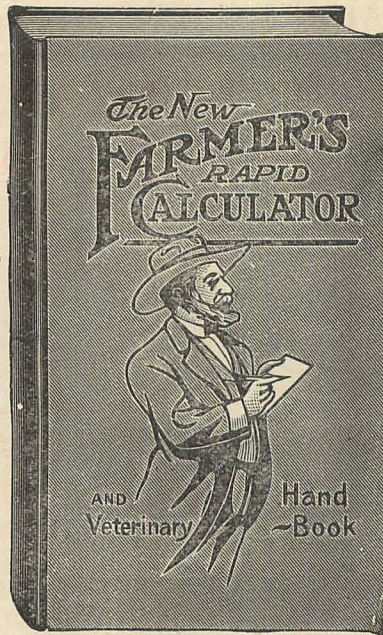
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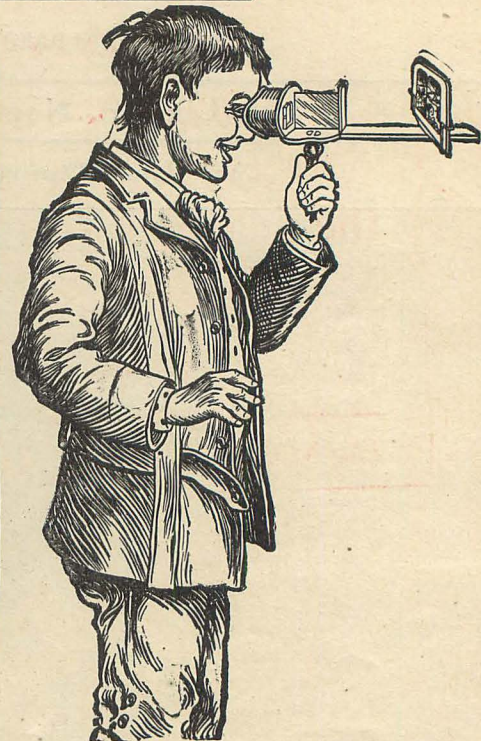
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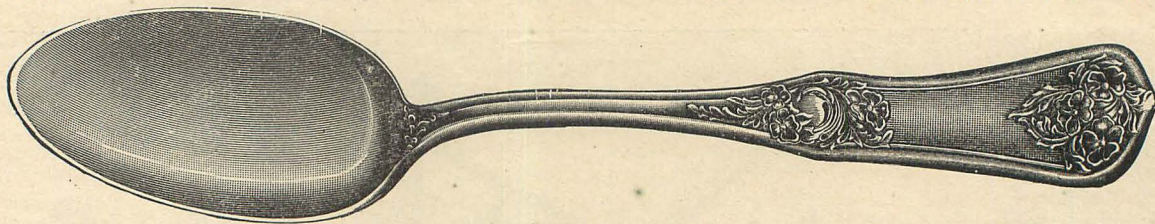
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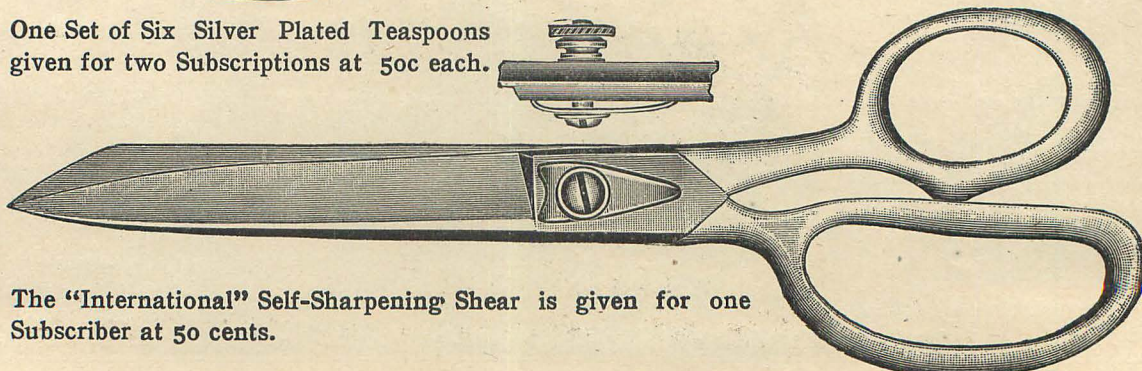
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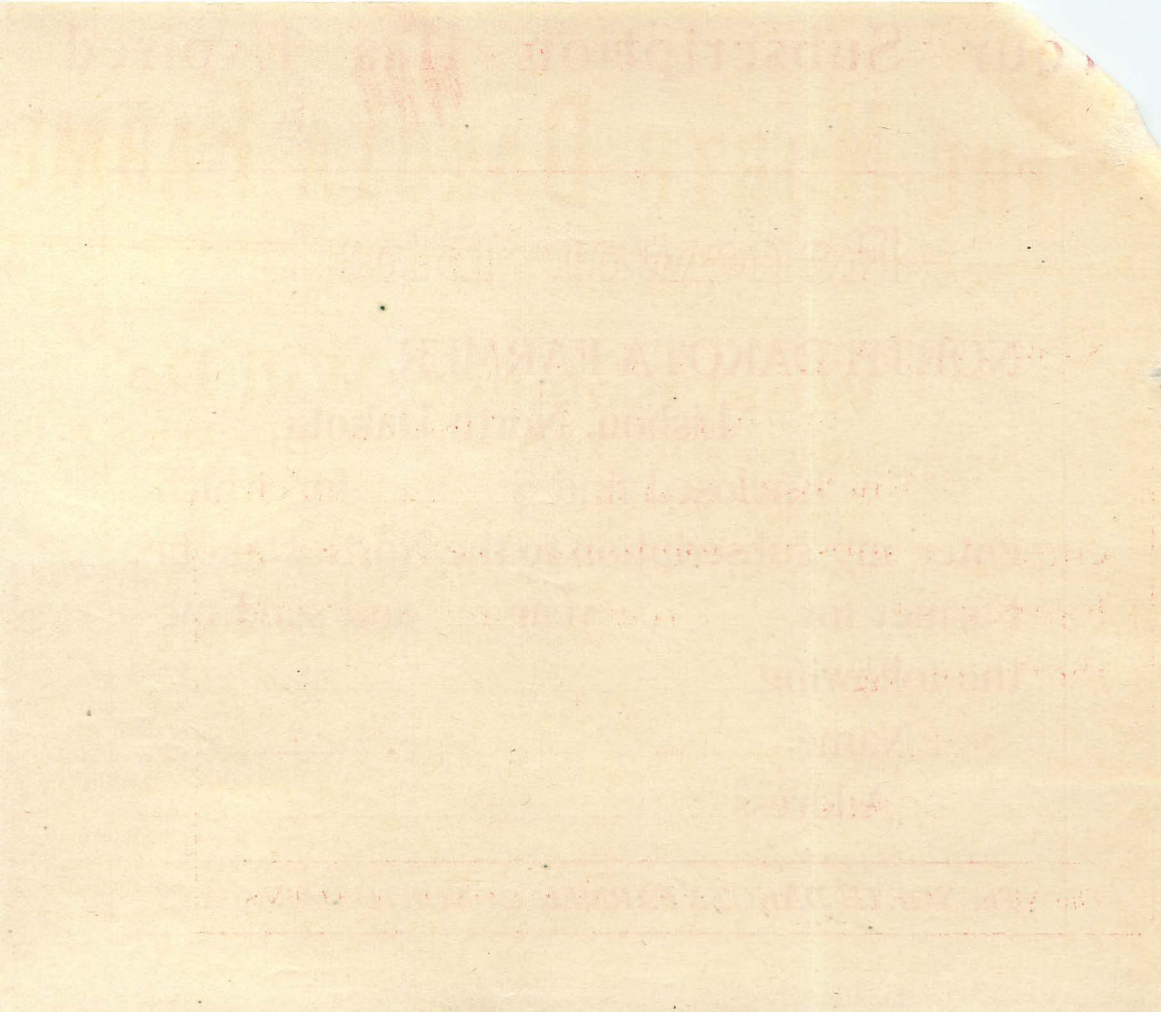
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V

# THE NORTH DAKOTA FARMER

Vol. 12, No. 9

LISBON N. D., MARCH 15, 1911

50 Cents a Year

## What Rotation Will Do

Jerry D. Bacon at the Tri-State Convention, Fargo, N. D.

I come to you, not as an instructor in farming from a scientific standpoint, but as one of the practical operators in our great family of northwestern farmers whose holdings are afflicted with the disease that has affected them for so many years, and each year became more serious until the instructors of the Agricultural College, and especially Superintendent of Farmers' Institutes Prof. T. A. Hoverstad, Prof. Thos. Shaw, and many others who have so kindly assisted them in the work, came to our rescue and induced some of us to begin a series of crop rotation as the remedy. I am improving, but far from being fully recovered. However, the chance for recovery has been so positive during the past few years that I am fully convinced of ultimately being restored to normal conditions, where I will be producing from twenty-five bushels of wheat per acre, and other crops in proportion, instead of expending the same amount of energy to raise ten bushels, as the average farmer does. And really, I expect to put my land in condition to produce more than it has ever done.

I desire especially at this time to congratulate those who are responsible for creating such an interest in the Tri-State Grain Growers' Convention, and I congratulate the farmers thruout the state for taking such an active interest, not only in this convention, but in the farmers' institutes held at many other points in the state. It is a demonstration to me that they mean to keep up with the times, and take advantage of every opportunity to increase production, and steadily raise the value of every acre of real estate within our borders. I hope and believe our 1910 short crop will prove to be a very great blessing, in that it will convince many more farmers that rotation is necessary, and thereby assist in bringing about better conditions and greater yields. The only grain I threshed this year was raised on 1909 corn ground, other grain

being pastured or cut for fodder. I believe there is no reason why North Dakota land should not bring from \$100 to \$200 per acre as does Iowa, and Illinois land, except that it is not properly farmed, and I believe the time is not far distant when we will have the proper rotation and stock raising to produce such values.

### Driven to Rotation

I came to the state in 1881, and since that time have farmed each year several hundred acres of land with a gradual decrease in yield until driven to rotation and raising livestock six years ago. I started by putting in about twenty acres of corn. The yield of wheat on corn ground being so much better than on adjoining land of the same kind, convinced me it was profitable; consequently, I am at the present raising from 200 to 250 acres annually. The continuous cultivation of corn conserves moisture and leaves the land in fine condition for a crop of small grain, besides killing innumerable more weeds than summer fallowing would do, and the labor in raising a crop of corn is nearly all done at a season when wages are low. For instance, between seeding and haying, when men usually are more plentiful than any other season, is time for corn planting and cultivation. If you leave your corn in the field to be husked and allow your stock to run in the stalks during winter, the gathering comes when wages are also low, but if you cut your corn while the stalk is green so as to get the benefit of the fodder either by shocking or putting it into the silo, that portion of the work must be done with expensive labor. I have therefore made an estimate of my receipts and disbursements in raising corn, wheat and hay, as follows:

### The Cost Per Acre

Net cost of raising an acre of wheat without figuring profit on labor:  
Plowing.....\$1.00  
Harrowing twice......20

Seed, average price..... 1.50  
Drilling......25  
Cutting......50  
Twine......15  
Threshing..... 1.00  
Marketing......45

Total per acre.....\$5.05

Average return \$9 per acre, or \$1,440 per quarter section.

Net cost of raising an acre of corn:  
Plowing (because discing fits it for

following crop).....\$ .60  
Harrowing four times......40  
Seed and planting......75  
Cultivating five times..... 1.25  
If put in silo (extra)..... 3.00

Total.....\$6.00

Average feeding value \$15 per acre, or \$2,400 per quarter section.

Net cost for raising an acre of clover:  
Seed and labor.....\$2.00

Cutting, stacking and delivering... 2.00

Total.....\$4.00

Average returns \$10 per acre or \$1,600 per quarter section.

Some of you may differ with me a little in estimates, and I am willing to concede that they may not be absolutely correct, but if any one present desires to ask me questions, I will be glad to answer them to the best of my ability. I believe the greatest good in such meetings comes thru the question box, for hardly any two men have identical experiences in practical tests; consequently thru the question box we draw out the different experiences. My experience has made me a firm believer in corn, clover and livestock in this locality, and while my experience in raising alfalfa has not been successful, I believe it will be some day the most valuable crop raised in the state. I think the trouble is, we have not found out how to raise and care for it but I have great faith in our experiment stations working out the problem, and each of us should try at least, a small patch



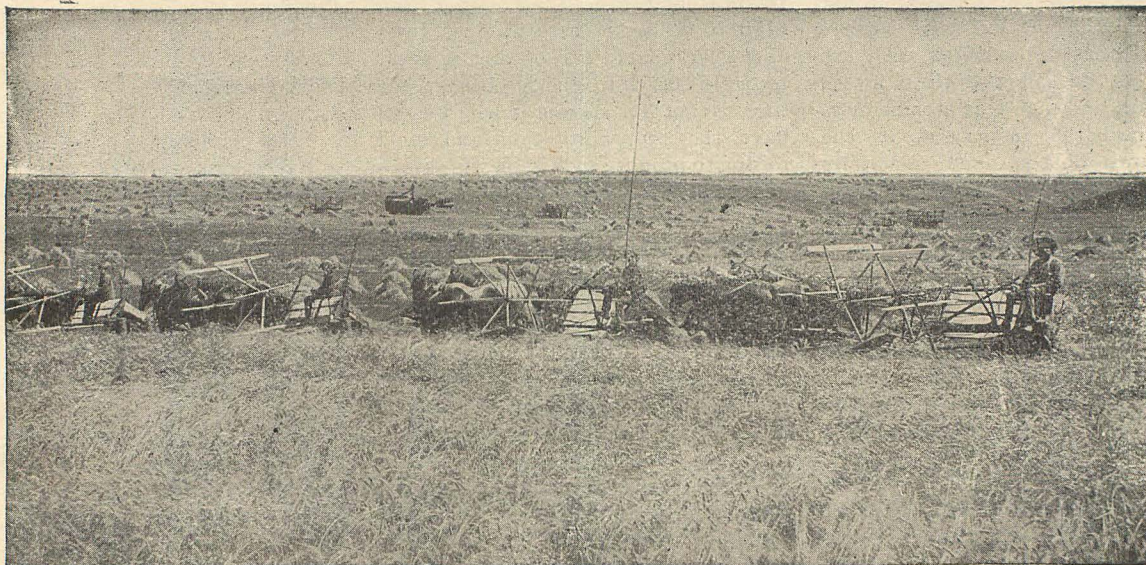
each year until we become convinced that it is or is not practical.

It is also necessary that each of us pay a little more attention to the vegetable, butter and egg question. It is almost a disgrace to admit that butter, eggs, and vegetables have to be shipped into the state, and especially vegetables, for we have one of the best vegetable raising countries in the world. People from Iowa and Illinois, with their high values in land, hardly believe their eyes when they see some of the vegetables grown and exhibited at our fairs; and still, carload after carload is shipped in and sold at a profit to the producer after paying freight rates and commissions. Let us join hands, awaken out of this stupor, and proceed to bring about the degree of prosperity we are entitled to.

wheat for experiment, threshing  $35\frac{1}{2}$  bushels per acre off the clover ground. This demonstrates that clover puts back the nitrogen so essential for wheat production.

Since beginning the rotation and stock raising, I have been afflicted with almost every ill the farm is heir to, viz: Fire, hog cholera, tuberculosis and drouth, and such experience has sometimes almost discouraged me with farming. I believe, however, I have mastered the situation to such an extent as to now be on the highway to a dividend paying proposition. I hire everything done, and keep a strict account of every branch of the business, and each kind of livestock has shown a profit, even disregarding manurial values which entitle diversified farming to a further credit, while the

for one man to bring to its highest point in production. Under such a condition our social and education advantages in rural districts would be much improved. It would be the making of a real home on the farm, instead of simply a place to earn a livelihood, and be forced to go elsewhere for pleasure and to spend the surplus. I long to see the neighborly conditions among our farmers which existed years ago when the school teacher boarded at the different homes in the district, butchering time a neighborhood feature, and the barn-raising a time of general neighborly assistance and jollification. I do not wish you to think that I believe the present system of contracting for building is not better than the old-fashioned way of assisting each other, but the point I



OLD STYLE "ROTATION": Wheat, Wheat Again, More Wheat.

#### His Rotation

After a crop of corn, I usually sow clover and timothy with wheat as a nurse crop, sowing the wheat a little thinner than when there is no grass seed used. The following crop is used for hay, but would also be very profitable for seed. The following season, the land should be pastured, then broken up and seeded to wheat or corn, and the yield compared with that on other ground equally as good will be absolute proof of the value of rotation.

Ex-Governor E. Y. Sarles said he broke up a pasture that had been used for twelve or fourteen years, and sowed it to spring wheat, harvesting  $25\frac{1}{2}$  bushels per acre. On another piece that had been seeded to clover the previous year, which he had expected to use for pasture, but finding the germination of clover was not as good as he had expected, he plowed the piece, after he had the balance of his spring work done, and sowed it to

farming operations and grain end show a strong loss; however, on the whole, the farm has, even this year, paid a small dividend. I doubt if a single exclusive grain farmer in my county can show any margin on the right side of the ledger after paying for every hour's work at reasonable wages, as I have to do, and if I can make a profit farming as I do, there is no reason why any practical farmer with a family of boys and girls to assist in the labor, cannot get rich in the Red river valley with reasonably good management.

#### Too Many Foreign Owners

In my judgment there is too much land in North Dakota held by speculators and renters, and one of the chief objects of all who are interested in our welfare should be to see that a family is living on every quarter or half section. It is true some are able to profitably handle a larger amount, but as a rule, a half section is enough

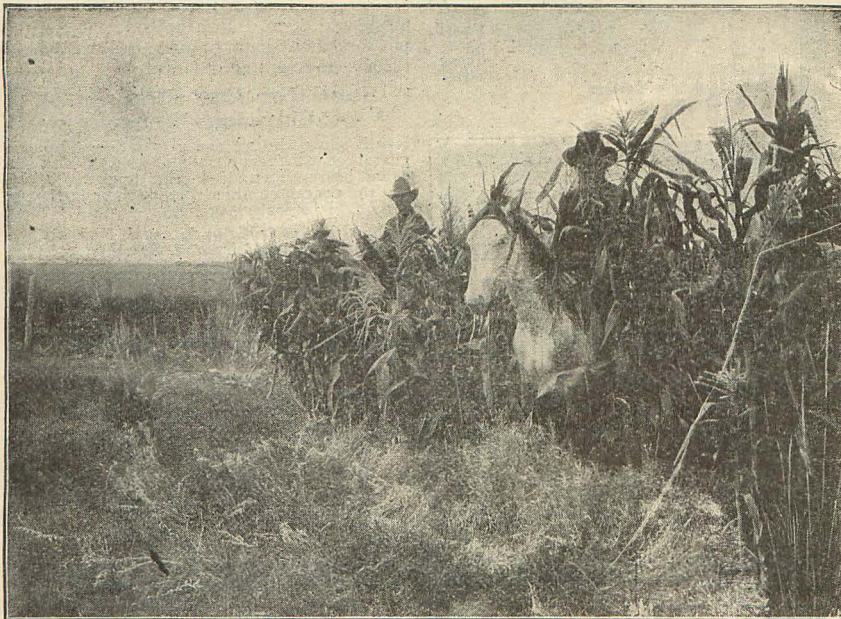
wish to make is that the neighborly conditions of the farmers were better then than now. Everything at this day and age seems to be on the "get rich quick" plan, regardless of our duty to ourselves, our neighbors and our land. The rising generation would be content with home life on the farm if they had plenty of stock to care for, and occupy their minds, and neighbors at a reasonable distance with whom they could mingle. I say, friends, stick to the farm; talk farm; think farm, and dream farm. Make companions of your boys and girls. When you give the boy a colt, don't have it "bub's colt and dad's horse," or the "girl's and mother's cow," but see to it that the proceeds go to the child's account, and assist them in making a profitable investment. In this manner I believe you will increase their interest to such an extent as to make farmers and farmers' wives out of at least 50 per cent more of the rising



Our young people are more rugged, vigorous, industrious and intelligent than those of almost any other locality, and inasmuch as we are purely an agricultural state, and in view of the fact that nearly all our great men have emanated from the farm, I know of no reason why a condition cannot be brought about thru the proper efforts of our people, to make North Dakota one of the foremost states in the union—not only by greater production from the soil, but by the production of great men and women, engineering matters of importance in this, the greatest republic on earth. Our boys may not be Lincolns, Jeffersons, Garfields or Roosevelts, nor all of our

generation in farming communities, girls, Harriet Beecher Stowes, Florence Nightingales or Frances E. Willards, but all may become capable of being valuable men and women in our climate, soil and great public institutions, to develop a class of citizenship far in advance of the average, and I believe perseverance on the part of those who commenced the rotation campaign, and proper assistance from our citizens is sure to bring about such a result. Nature and the government have done their part in giving us one of the most fertile countries in the world, from what, in the early days, was known as a part of the great American desert, and we are cheating a bit unless we do the work,

### Under Favorable Conditions



Corn in Northwestern North Dakota

## Corn as a Dry Farm Crop

W. R. Porter, Supt. Demonstration Farms, N. D.

In all the dry farming areas the conservation of the rainfall in the soil where it becomes available to growing crop is the keystone of successful agricultural operations.

This is generally done by the cultivation of the soil during the entire growing season. If no crop is produced on the land this operation is called summer-fallow or summer culture. Over most of the dry farming area nearly, if not as good grain crops can be grown following a cultivated crop as on summer-fallowed land.

When the bare fallow system is used a whole year elapses without any returns either on the investment or for the

labor performed. If a cultivated crop can be grown with as good crops following it should more than pay its expense which will consist of the cost of seed, planting and harvesting; the cultivation would have to be done anyway so this should not be counted against the cost of production of a crop of corn. Corn is preeminently this crop—first—because it produces an abundance of cheap feed—second—it shades the soil during the excessively hot days of July and August, thereby preventing loss of soil fertility and third—a corn field has a cooling rather than a heating influence on the winds that blow across it. This may have a very beneficial effect on

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HELP BOOST NORTH DAKOTA



surrounding crops when the temperature is near the 100-degree mark.

On most farms in the dry farming area enough livestock should be kept to pay most of the running expenses of the farm. Hay and pasturage are very short in such areas and consequently too dear for cheap livestock production. Enough corn should be grown to supply: 1st, the work horses with roughage during the winter, if not the working season; second, to supplement the pastures of the summer and fall as a soiling crop or in the form of ensilage and to form the bulk of their winter ration; fourth, to supply the sheep and hogs a cheap fattening food for finishing them off in the fall.

The first essential to corn culture on the dry farms is livestock, for without such there is no way of utilizing the corn crop, but if livestock are kept, feed must be had; the corn crop can be converted into beef, pork, mutton, wool, butter and eggs; commodities that can always be converted into cash or its equivalent. The by-products of livestock (manure) should go back onto the land to replenish the diminishing supply of humus and fertilizing elements so essential to large yields.

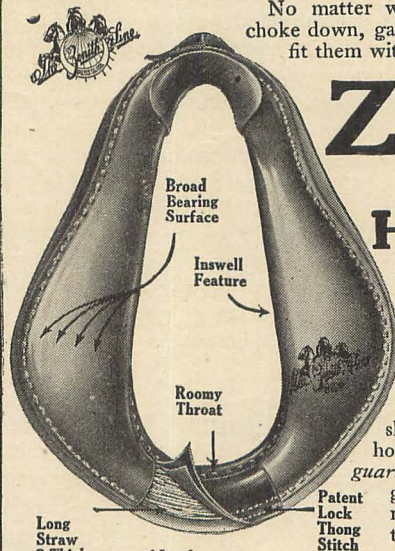
The second essential to corn culture is a conviction that it will pay to grow livestock on the corn crop produced and a determination to grow corn as their chief feed in spite of adverse circumstances. In order to be successful in growing corn on a dry farm the selection of the proper variety is essential. In western North Dakota and eastern Montana, Squaw, Gehu, Mercer, King Phillip and Triumph will probably prove the best flint varieties, while Golden Dent and Northwestern Dent will probably prove the best dent varieties. Good seed is very important. It should always germinate strong and 95% or better.

The time to seed is from the 10th to the 15th of May in a well-prepared seed bed which has been manured and plowed the fall before and which has been harrowed at intervals from the time the soil had thawed out in the spring until the time of seeding. Thorough cultivation is very important as it warms the soil, decreases evaporation of soil water, and forces the corn ahead very rapidly. On the dry farms the corn should be cultivated after every rain as soon as possible in order to bottle all water possible in the soil. As soon as the corn is cut the land should be disced lightly but it should not be plowed. Should any heavy soaking rains come after this in the fall the land should again be harrowed. In the spring wheat should be sown as early as possible but very rarely should the corn land be plowed before seeding wheat.

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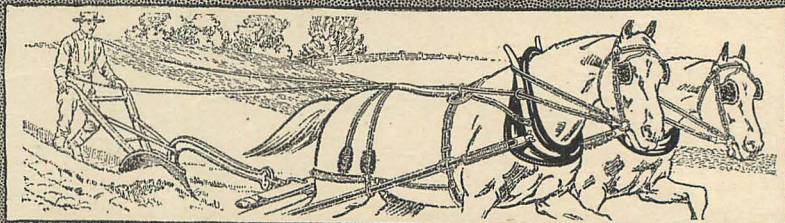
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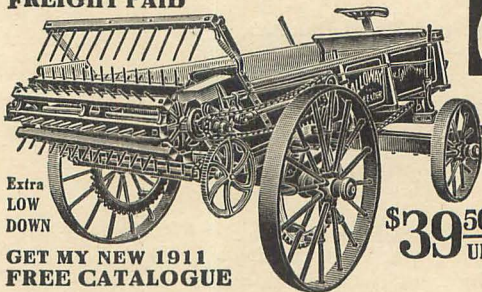
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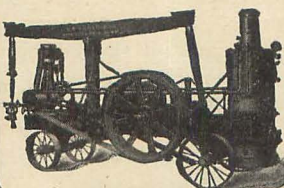
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## From the Farmers' Institutes

### AT DEVILS LAKE

The big farmers' institute came and was a splendid success in point of attendance and in the interest displayed.

One of the features of the institute was the address by Pres. J. H. Worst of the A. C. The lecture dealt with dry farming, crop rotation and the agricultural education of children. He explained that the man who had given his field and crop the proper attention had still to contend with weather conditions and these were not entirely beyond his control. The farmers of the old country have learned to control them and can estimate ahead with surprising accuracy their yields, while in this country a man never knows until his grain is threshed how much it will amount to.

"I believe," said the speaker, "If every farmer in the state would plant a line of cottonwood trees or a row of hedge we would never suffer again from these drying hot winds. Every leaf would become a heat absorber and the birds that would nest in their branches would destroy the insects that eat up more crop than can be grown on the ten or twelve acres occupied by the trees." It will take twenty-five years to bring about this condition and for that very reason, tree planting ought to commence at once.

In speaking of the danger of farming too much, President Worst said that it was impossible to farm two or three sections with a small team force. Such farmers should be properly called wheat manufacturers and their farming is a mere expenditure of labor, capital and executive ability. Every time they take a crop from their land they are robbing it of so much power. The land in North Dakota today is suffering from a fungi disease, he said. Fungi, he described as living organisms which develop within the soil and prey upon the plant like lice upon an animal and as each animal seems to have its particular kind of parasite so each seed has its fungi. Now when one crop is planted in a ground year after year, these fungi multiply until they do severe damage. But if wheat is planted one year and something else, say corn, the next, the wheat fungi would be at a loss for something on which to nourish.

The time was coming, the speaker said with conviction, when we would be proud we live in a dry country. That time would come when farmers had learned the methods of dry farming and their land would rise accordingly in value.

### Agricultural Education

The speaker closed with an eloquent appeal for the agricultural education of children. He said, "This great agricultural country cannot bend its education away from the soil and then look to the soil for support. A great author has called nature, God's text book, and the study of nature was nothing but the study of agriculture. The farmer pays directly seven-ninths, and indirectly all the taxes that go towards a school fund to educate the children away from the farm."

Mr. Worst would not say that the school fund was too large, it was not large enough, but he would not have it expended entirely in the teaching of Latin, Greek and other classical subjects, but spent in practical instruction. He would have the course introduced into every country school, high school, normal and even would not object to the university devoting its efforts to agriculture.

Cases existed in the state where the farmer worked and toiled to educate his children in the branches that unfit him for farm life and tend to turn his sympathies elsewhere. "I remember," he said, "the old pedagogues who used to travel thru the country in my youth and lecture at the school houses and invariably their advice was 'be good and study hard and you will not have to be farmers. Why,' he continued, 'to be a good farmer requires more skill than to be a doctor, lawyer or any other professional man. The doctor has spend thousands of years studying the human body and there is still much that he does not know about it. While on the farm are numerous animals and insects each nearly as complicated in their structure as the human body and the farmer must know all about these.'"

### RECORD BREAKING FARMERS' INSTITUTE

The farmers' institute held at Cavalies, North Dakota on Feb. 22 and 23 brought together a larger number than any other farmers' institute in the state. People came from all over the county, some driving 30 miles and others coming on the train for even longer distances. A banquet was served on the evening of the 22nd and free dinner to all who attended both days. Free lodging was also furnished to those who cared to stay over night and many availed themselves of this hospitality. The attendance was so large that no hall or church in the town could accommodate all at once so two meetings were held at the same time. At the banquet which

was open to all visitors, music was furnished by the orchestra and the band played on the street and in the hall.

Miss Anna Barrows of Columbia University gave several demonstration lectures on the cooking of meats, eggs, fish, cereals and the use of milk. She also lectured on the saving of steps in the home and on gardening. She called attention to the fact that while the more tender meat as the sirloin is higher-priced the less tender meat has as high a food value, and by a little longer preparation can be made tender and palatable. When frying or roasting meat subject it to a high heat at first to close up the pores thru which the juices run out. When making soup start the meat boiling slowly to let the juices soak out into the broth.

Prof. Thomas Shaw gave talks on alfalfa, clover, corn and dry farming. He emphasized the value of alfalfa as a hay crop. In addition to the producing a valuable hay it also adds fertility and humus to the soil. He stated that it would do well in this section where the soil was well-drained and not underlaid with hard pan. The land should be manured and either summer-fallowed or in some cultivated crop the year previous to sowing the alfalfa. Sow ten pounds of alfalfa per acre in the latter part of May and without a nurse crop. In discussing corn he said that it was a good crop to prepare the ground for a crop of winter wheat. The wheat to be sown in with a one-horse drill in August and in cutting the corn to leave three rows, then cut ten or twelve rows, leaving three and so on. This is to hold the snow for a winter protection.

Col. R. A. Wilkinson said that the only thing that grain growing seemed to do successfully was to make a mortgage grow. In this kind of farming we sell the fertility to other nations who then farm at our expense. Corn, clover, alfalfa must be raised to clean the land, to add humus to it and to make a rotation of crops with the grain. To make the most out of these crops they should be fed to livestock, which returns fertility to the land. In starting dairying he recommended selecting out the best of the native cows and breeding them up with a sire from one of the dairy breeds. He contended that the raising of stock makes the farmer more industrious and thrifty and that it would interest the children more than any other kind of farming provided the work was done within regular hours, and not when civilized people should be in bed.

Supt. Hoverstad in discussing weeds brought out how simple a matter the growing of weeds is. Most of the weeds can only come from seed and to kill them it is only necessary to see that they are not allowed to go to seed. In the con-



tinuous grain growing the weeds ripen their seed before the grain. Some of the seed will shatter when cutting the grain. The land is then plowed, which buries the weed seed. In the spring a seed bed is made. Just ideal conditions for the weeds. To kill them some other conditions must be brought in. Growing corn is good if clean cultivated. Growing clover and alfalfa is good, as even if some weeds should grow in them they are cut before the weeds ripen their seed.

Prof. W. C. Palmer gave an illustrated lecture on soil culture, bringing out the fact that moisture moves thru a compact soil, but that it can move only very slowly thru a loose soil as the dust mulch. He also illustrated on his blackboard how the plant makes most of its growth in the layer of soil turned

with the plow. That deep plowing gives the plant more soil to draw on for moisture. The professor also gave an address on tree growing.

Mrs. Laura Campbell of the Agricultural College gave a talk at the church on mechanics for the home.

Not only had the business men worked together but even the weather man had been enlisted, so that the weather was all that could be asked.

Supt. Hoverstad was much pleased at the fine preparations. He said that he and the speakers could not make an institute but that it was the audience that had a very large part to do in making a successful institute, and that Cavalier had done much to add to the success of the North Dakota Farmers' Institutes.

horse has no means of making his pain known to the majority of drivers while the wearer of the patent leathers can "grin and bear it," consoling himself with the thought that his understanding shows up well even if his face does wear a peculiar, puzzling expression. The collar should be well made with a fair amount of springiness, on pressure, smooth even surface, and adapted to the use required, as for instance a heavy-collar for heavy draft work while a lighter one can be used for driving horses. Let it be sufficiently long that the hand may be easily passed beneath the under surface of the neck and wide enough that the fingers can just be passed between the front border and the side of the neck.

This rule varies somewhat of course in the various types of horses, as some thick-necked horses expand the neck when drawing a load. These will require a slightly wider collar. Let the collar fit snugly over the entire bearing surface. Having fitted the collar, next comes the fitting of the hames to the collar and the proper adjustment of the height of the attachment of the tug. A good rule to follow is to have it come about one-third of the height from below. This may need to be varied somewhat as we consider the angle at which the hook passes from the hame and whether the horse has a free or check rein. In well made hames this hook passes out at a right angle and is easily adjusted. If placed too low the point of the shoulder shows abrasion and soreness. If too high the soreness will be found just in front of the upper part of the shoulder-blade. Occasionally a sore neck results from this cause but rarely if the collar is of the proper length.

When sores occur seek the cause, correct it, then aid nature in effecting a recovery. Having removed the cause wash well after each day's work and dust with any good antiseptic powder or easier still dampen well after washing, with a solution of bichloride of mercury and tannic acid.

## Why? Where? When? How?

Have you a Query? Write the North Dakota Farmer

### SHALL I SELL MY HOMESTEAD.

I am a homesteader 30 years old and single. Can make five-year proof next year. My immediate locality is far from being a desirable farming country, being hilly and very stony, very little substantial farming being done near by, 10 miles to market, and very bad roads, neighbors few and far between; and the prospects of our having good roads and well-developed neighborhood seem to me very remote.

I have 60 acres broken, a fairly good barn and farm machinery, 5 good, young work horses and 4 colts. I like farm work and believe in modern and progressive farming.

Now keeping in mind the question of building a permanent and comfortable farm home, shall I stick to this rough homestead I have, or shall I when I prove up, sell the claim for what it will bring, and buy land more desirable for farming, near market?

If the foregoing question is of sufficient importance to have your attention, I will thank you in advance for any suggestions offered me.

Mercer, N. D.

A. E. H.

Answered by Prof. J. H. Shepperd  
Agricultural College

Replying to the letter handed me from A. E. H., I want to say first of all that he has raised a question which will not permit of a definite answer. If he has the disposition of a good stockman, the fact that he is located in a hilly region, where it is necessary to remove a great many stones before successful field work can be carried out, will help him by giving him a chance to get cheap pasture land where the taxes will be light and the supply of feed for his stock

probably greater in proportion to the investment than it would be on richer land that is not so broken. With livestock the matter of being a considerable distance from market is of little consequence. If on the other hand, A. E. H. has not and does not believe he can develop a taste for stock growing, he would probably do better to move into a district where grain farming can be made the predominant feature and where he can be near to the market.

The hill land which he describes, usually carries enough valleys to allow one to produce a good supply of winter forage. In some parts of the state they are learning to dam up some of the ravines, and use the water retained for irrigation, thus making the production of a supply of winter forage and of grain feed a certainty. I believe that the region which A. E. H., has described offers as good an opportunity for the right man to succeed as does the average grain growing community.

Question. What causes sore shoulders and necks in horses?

Answered by Veterinary Department,  
N. D. A. C.

Sore shoulders are, as a rule, due to an improper fit in collar or hames. Occasionally uneven surface or hard lumpy areas in the filling may be the cause, or improper care of the horse in early spring before the skin and underlying tissues have become hardened to the collar pressure. Diseased conditions of the foot or limb may cause sore shoulders from an abnormal gait. A horse's collar should be fitted with greater care than a pair of patent leathers on an aggregation of bunions, corns and ingrown toe nails. Why? Because the

### COST OF CREAMERY AND EQUIPMENT

Will you advise me if it is possible for a person to secure good reliable literature pertaining to a creamery, the supplies required, and an idea of the cost of setting up the necessary machinery, and details of running the same under ordinary conditions?

Cummings, N. D.

H. J.

Suggestions for Creamery Organization

By Prof. G. L. Martin, A. C.

There are two ways of forming creamery organizations. One way is to have it done by creamery promoters—per-



sons interested from their own standpoint and the other way is to do it yourself. The best way is to call a meeting of farmers and business men in the locality where such an organization is desired. Arrange to have attend some disinterested dairyman from the Department of Agriculture, State Dairy Commission, or the Agricultural College who is thoroly familiar with every detail of the business, willing to cooperate freely and to familiarize every one with the details of the business.

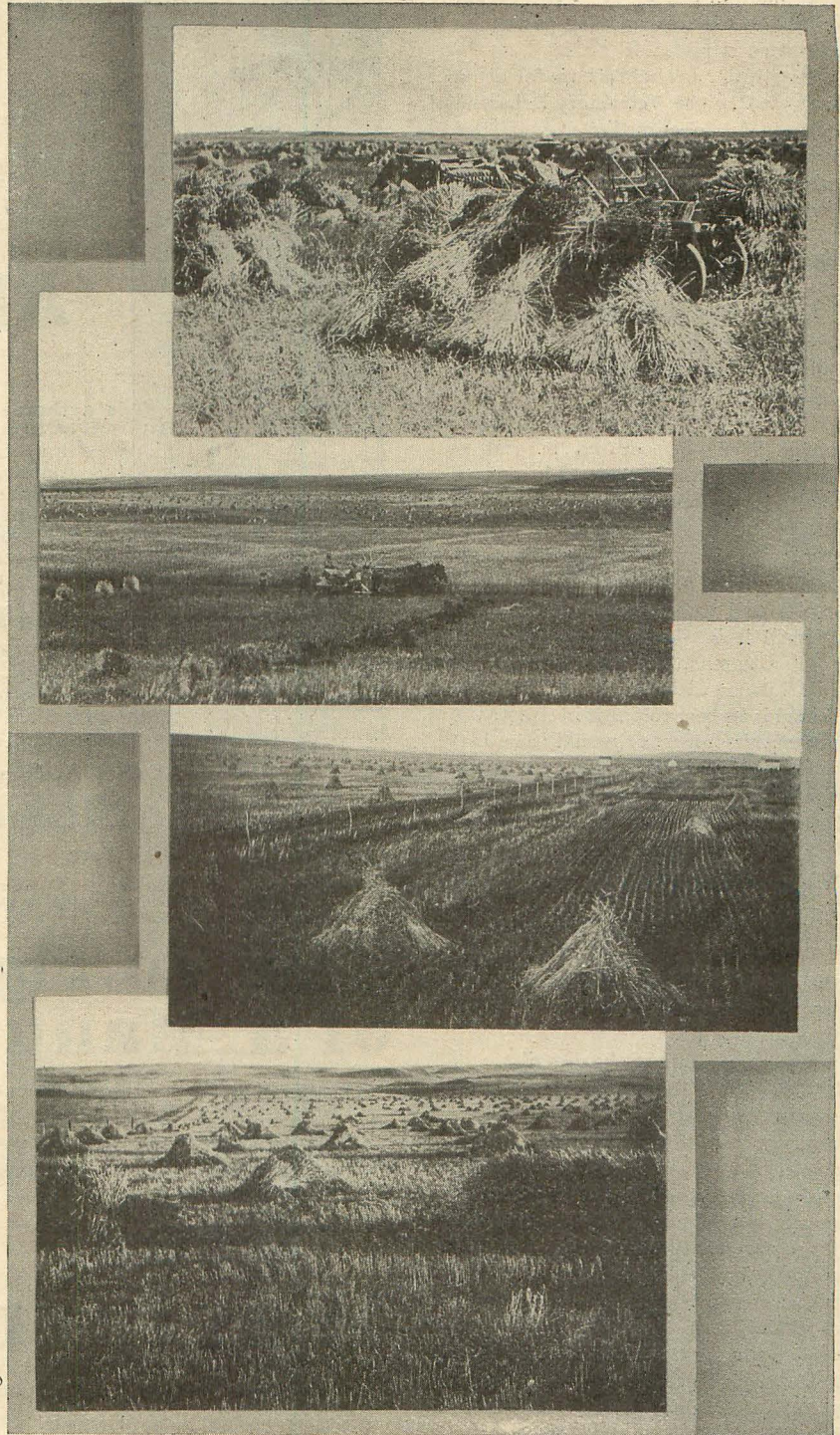
It is well to select temporary officers and have committees appointed to canvas for cows and shares, building and equipment, and plans for organization. After the various committees have reported favorably and it is desired to effect a permanent organization, secure from the secretary of state blanks and information necessary to form the company. The effectiveness of organization depends a great deal upon the number of persons interested in the matter. For that reason it is advisable to secure as many share holders as possible. It is urged that a limit of four be put upon the number of shares which may be held by any one person thus insuring a wider distribution of interests.

The first requisite for a creamery is a sufficient number of cows. With the kind found in the Northwest, no creamery can hope to succeed without at least 400 cows within a radius of 5 miles from the creamery. This is the very point that the "creamery promoter" will overlook and a large percentage of the "closed creameries" over the country have been built by the promoter and failed from lack of cows and too large an investment.

The cost of building, equipping, and operating a creamery will depend upon the organization, the amount of equipment and the volume of business. A building sufficient to handle the product of 400 cows if put up by the company ought to cost not over \$1800, if built by the promoter often costs \$3000.

The machinery required to properly equip such a creamery will depend largely upon the volume of business. It is much better to begin with only what is actually necessary then later install such machinery as needed. In many of the promoter's creameries can be found expensive new machinery that has been cast aside because there is no use for it. The first cost of starting a creamery is large enough at the best and to have a lot of useless machinery cast aside is a needless expense.

It is always advisable to install new machinery which will cost close to a thousand dollars for the loss in efficiency of second-hand equipment often will more than offset the additional cost of new.



Wheat, Oats, Barley and Rye

The details and cost of operating a creamery would necessarily be determined by those interested in the company.

The volume of business would have to be large enough to pay operating expenses and return a fair margin of profit otherwise the company necessarily would be short-lived. Detailed information may be had upon request from the Dairy Department of the Agricultural College.

Question. Which is the best crop to put on new breaking?

Answered by Prof. J. H. Shepperd

Flax will make the best yield of any crop on new breaking. The land will be in a very much better shape the second year if no crop at all is grown on it when it is in sod. If the crop is taken off early and the sod backset in good shape, the injury will be very much less than where the land is backset late in the season or not at all. The moisture



that the flax takes out of the breaking keeps the sod from rotting as well as it otherwise would.

Question. Is there a cure for heaves?

**Answered by the Veterinary Department**

There is no cure for heaves, but a heavy horse should be kept out in the open air as much as possible, while bulky feed and dusty hay should be avoided.

—Boost—

**WHAT SHOULD BE DONE WITH THIS LAND.**

In the spring of 1908, I sowed 25 acres of timothy and clover. The grass came up fine, but we had a dry spell, and the most of it killed out. I let the land lay over in 1909, and the grass grew up some. Then I pastured it and manured it with a spreader, 12 loads to the acre. In the spring of 1910 I plowed it up about 4 inches deep and put it into flax. The season was so dry that it made no crop, so I pastured the land for awhile and then stubble-disked it and dragged it in the fall.

The land has a kind of sharp, light soil, right on the banks of the Sheyenne. Would it be best to put it in timothy and clover this spring, or would it be better to let it go until next spring and plow it down deeper? Please let me know thru the columns of your paper, for the seed is too high this year to sow if the land is not in the right shape for a crop.

Maddock C. A.

**Answered by Prof. Shepperd**

Replying to the inquiry of C. A., I wish to say that he is having some of the discouragements that come to any man who sows seeds.

The grass land that he describes which he seeded in 1908 and manured in 1909 should be in good condition to seed timothy and clover on this season. I think the depth of plowing will not seriously interfere with getting a catch of grass. I would prefer to have it plowed six or seven inches deep. It will all depend on how the season of 1911 proves to be, and if we have the usual amount of rainfall C. A. should get a good stand of timothy and clover on his 25 acre field. The fact that the clover started growth there once before will help it to be able to make a catch again as it is sure to leave the ground well supplied with the inoculating bacteria.

—No. Dak.—

Question. How may I conserve the rain of spring?

**Answered by W. C. Palmer**

It is common knowledge, that anything wet dries on being exposed to the air. It is as well known that oil moves up thru a wick, and that if the wick is cut the oil can not pass over the gap. Water will act the same as the oil and it moves thru the soil in the same way that it does thru the wick. A deep furrow

See "Dry" Farming Offer.



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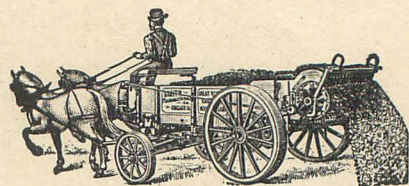
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slice will offer more feeding room for the roots than a shallow one. The furrow slice should be packed firm against the bottom so as to furnish the means for the moisture to pass from the sub-soil to the surface soil as the plant needs it. To keep the moisture from passing to the surface, and evaporating the surface soil should be kept loose, a condition known as the soil mulch.

Another reason for the deep plowing is to furnish a large reservoir to take up the rainfall readily. Shallow plowing can not take in rain as fast or as much of it as deep plowing so the result is more runs off.

The soil mulch can be produced by the common harrow. Crops are harrowed after they are up, grain can be harrowed till five or six inches high, and some are trying to harrow till it heads out and with good results. The harrowing of grain or corn should only be done on bright sunny days and not before the sun has been up three or four hours. The plant when wet and in the morning and on cloudy days is more crisp and breaks up easier. The mulch should be made as soon as the land is plowed.

#### HANSBROUGH'S THRILLING STORY

"The Second Amendment" which has just been written by ex-Senator Hansbrough of North Dakota, will be a literary sensation. It is a thrilling love story, full of romance and adventure, and the plot is closely interwoven with political conditions about the National capital. The Evening Times will run this story, exclusively, as a serial, beginning about April 15. Everybody in North Dakota will want to read it, and as a special inducement we will send the Evening Times until September 1, 1911, to any address, for \$1.00. Subscribers in arrears may pay to date, and take advantage of this offer. Address the Evening Times, Grand Forks, N. D.

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**Vol. 12 MARCH, 1911 No. 9**

Will the season be a dry one with summer droughts or shall we have rain for a fair average crop? Better plan on a partial crop failure under ordinary methods of farming and go at it to get the best possible crop by better methods of cultivation holding the moisture in the soil and keeping a good mulch on the ground, then you will be sure of a fair crop and if the season is good there will be a big harvest.

—Boost—

There is plenty of moisture on and in the soil of the Red River Valley for a good crop this season. The only thing is to get the water into the ground and hold it there for the use of the wheat or corn crop. There must be no crop failure this season in the valley; if there is it will be because the land not was cultivated to save the moisture we have.

—Boost—

Save a good lot of pigs to be fattened in the fall if the year is dry. They will bring you a good return, live on some of the waste products of the farm and be easily fattened to 125 to 150 pounds each in the fall and 10 or 12 will help out very much. Plant some crop for the pigs: peas, rape, barley, corn, beets, pumpkins, potatoes, all are good.

—No. Dak.—

If you have hens as you should have on every farm, then see that you get a good bunch of chickens started and in the fall you will get returns and so help out if the season is bad. Don't get discouraged and declare the crop is going to be a failure anyway so what is the use to try, but so farm that in spite of a poor year a good average crop will be assured.

We can hardly expect a large hay crop this year so prepare to grow plenty of feed; put in corn, beets or a field crop as a forage crop and have plenty of good winter feed. There is no better roughage for cattle and the stock should not be sacrificed because of a little set back from a dry season or two.

—Boost—

Remember that there is no part of the country but what has its years of drought, its dry periods, and shortage in crop and North Dakota is no exception to the rule. I have seen crop failures and partial crop failures in New England and in New York. I have seen the same thing in the central west so do not get discouraged and give up. Pioneer days are gone and conditions are now different from what they were in the early days before our land was broken and the water had penetrated into the soil below and hot winds blasted all. The rainfall is still the same but the climate is different, due to man's influence in subduing nature and holding the waters for summer that formerly gave us such terrible spring floods.

—No. Dak.—

The farmers need to wake up, organize and protect their own interests. If protection is to be the best policy for the interests then why not for the farmer or the consumer. If free trade is good for the manufacturer, then why not for the farmer. If the interests want anything they organize and go after it and get it whether it benefits the farmer or not. Why not the farmer organize and make his influence felt.

—Boost—

There have been frequent complaints of death to cattle from eating the screenings from flax. Better be cautious about feeding these products, twenty-six cattle from three farms have during the past month died after eating flax screenings. What do you know about it? Let us have your experience.

—No. Dak.—

Sal Vet according to the report of the A. C. is not all that is claimed for it. They say: "In fact, the product may be said to be a commercial salt to which has been added a small quantity of iron sulfate with enough charcoal to blacken the entire mass, and small quantities of crude gentian and quassia,—so small indeed that they could not be even approximately estimated. Salt is an essential for animals, but Sal Vet, or common salt with the small amount of ingredients named associated in this product is not, as is claimed, a cure for indigestion. The price at which it is sold, \$5.00 per 100 pounds, furnished a good profit for the manufacturer." There are too many of this class of products to catch the farmer.

There are many requests for information regarding the use of commercial fertilizers and the benefits to come from their use. Many farmers are planning to make a trial of fertilizers this season. One eastern manufacturer is to ship 250 tons of fertilizers to two points in the state to be used experimentally without expense to farmer but to demonstrate what can be done. Crop rotation and good farming is what is needed, but farmers will wait until it is too late and then try fertilizers. We need better farming more than we need fertilizers, but fertilizers will help very much.

—Boost—

Some soils are lacking in phosphates available for plant growth and where this condition prevails we shall have marked improvements in crop if the season is favorable. Fertilizers, however, will not take the place of good farming but in the near future they may become a forced necessity in North Dakota as they now are in the East.

—No. Dak.—

See that all wheat seed is properly treated with formaldehyde of proper strength for destroying smut. It will pay, for a far better crop will be produced free from any smut to reduce the grade. One pound of 40% formaldehyde to 40 to 45 gallons of water.

—No. Dak.—

Flax should be a good crop and the price is bound to be high for another season since there has been such a shortage for the past two seasons. Treat the flax seed with formaldehyde as recommended by Prof. Bolley and so destroy flax wilt and then sow the flax on land that has not been in flax for a number of years and you will have a good paying crop that is bound to net you good money.

—Boost—

Hereafter under the new food law lard shall be put up in 1, 3 and 5 pound pails or containers or some whole multiple of these numbers and not short weight as has been common among both the packers and the local markets as well. Again, inferior grades of lard must be so labeled as to clearly show the source from which it is derived.

—No. Dak.—

Sanitary conditions should be improved until there is no chance for spreading disease thru our food supply. Undoubtedly a large proportion of tuberculosis, other than pulmonary, comes thru milk. One animal in the herd diseased is enough to make dangerous all milk even tho the diseased animal be not a milch cow at the time.

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Fruits, Vegetables, Spices, Extracts, Coffees, Teas, Cereals, Sauces, Catsups, Syrup, Molasses, Starches, Saleratus, Etc., Etc. These goods are the

BEST THAT SKILL AND MONEY CAN PRODUCE

### Stone-Ordean-Wells Co.,

WHOLESALE GROCERS.

Manufacturers and Importers

DULUTH, MINN.

BRANCHES at Minot, N. D., Billings, Mont., Bozeman, Mont., Butte, Mont., Hancock, Mich., Bismarck, N. D.

MONARCH BRAND



FOOD PRODUCTS

A GUARANTY OF PURITY. A WELCOME GUEST at every table where the HOUSEWIFE demands the BEST. THE MONARCH LABEL insures QUALITY in Coffee, Catsup, Pickles, Maple Syrup, Canned Goods or any article bearing the MONARCH BRAND of REID MURDOCH & CO., CHICAGO.

## ANOTHER PURE FOOD PRODUCT

### CEREKOTA

Self-Rising

### Pancake Flour

Is a Scientific Preparation of Healthful Appetizing Ingredients and the Best Flour Milled in North Dakota

**GUARANTEED Pure and Wholesome**

Ask Your Grocer for a Trial Package

### Bemmels Milling Company

Sole Manufacturers

Lisbon,

North Dakota



## Livestock Department

We need to encourage more dairying, more local creameries, more local flour mills and all other lines that will utilize the products of our farms and give us finished products. Which had we better send out of the state butter or wheat? We should not rest satisfied until we have new industries to use our farm products.. Canning factories for our corn, peas, beans, beets, pumpkins, etc. Why should not our bakeries furnish bread to cities outside the state and encourage our cracker factories to become strong industries famous thruout the land for their product. Why not make our own sugar from beets grown on our own soil? Why not famous sausage from North Dakota farms? All these to use the products of our flour mills, bran, shorts, etc., for feeding pigs, cows and sheep.

### HOG PASTURE

By J. H. Shepperd, N. D. A. C.

I believe that every farmer who starts to diversify his crops should adopt what is called a minor rotation or in other words, he should build a fence around some small pieces of ground handy to his building to be used in time as a hog pasture, a place for growing potatoes and perhaps for a special patch of seed corn. A pig that is fed grain all his life usually fails to pay expenses. One which is given the run of such a pasture until he is up to 150 pounds weight along with some grain feed will be produced very much more cheaply and economically.

Alfalfa may prove to be a practical hog pasture for this part of the state. If it does not you will be able to grow a good pasture by sowing a mixture of two pounds Dwarf Essex rape, a bushel of barley, a bushel of field peas and a little millet seed per acre.

At the Wisconsin Experiment Station as a result of a trial with hogs they found that an acre of rape produced as much gain on pigs when used as a pasture crop along with grain as 56 bushels of corn would do. It will thus be seen that the small pasture or a minor rotation produces a vast amount of value as measured in grain feed.

In addition to this feeding value of rape for hogs they were found to be stronger and gained more rapidly after the rape feeding was discontinued than the ones which had been on grain alone.

This is doubtless the result of being more vigorous and healthy. They found that the ones fed rape and grain considerably outgained the ones fed on grain alone.

—Boost—

### FARM AND STOCK NOTES

Do not let up on the feeding too soon. Clean milking has a tendency to make persistent milkers.

Oats and grass should be sown at the first favorable opportunity.

Overfeeding, too rich feed, and irregularity in feeding cause much loss among calves.

Generally, as the yield per acre is increased the cost of production is lessened.

One of the most important principles of successful business is to have no unproductive capital.

It is only that portion of the food consumed which is absorbed into the system that acts as food.

It is the skilled workman everywhere who receives the best pay, because he can perform the most labor in a given time.

It requires a closer application and study along a single line to make a specialty go, but when it does it usually pays best.

In some classes of farm products overproduction has not so much to do with the depression of prices as has poor quality.

Crops should be grown of such varieties as will enable the farmer to formulate a balanced ration from the products of his own farm.

It is better to have a cow that can do one thing at a profit, than to have one that can do two things at a loss.

If the farmer is to make his farm profitable as a business investment he must, in a measure at least, study the nature of its soil, its location and suitability for given purposes.

There are so many advantages to be derived from keeping the skim milk on the farm and using it in feeding poultry, calves and pigs, that if possible it is more desirable for a dairy farmer to sell only cream.

The draft horse must have a good walking gait, and as a part of his action, a true mechanical gait, so that as you stand in front of him and see him come toward you his legs move in line so there is no waste action, or throwing out of the feet.

The cow for the dairy-man is the cow that can make the most profit in milk, butter or cheese for feed consumed; just what breed does not matter so much, it depends entirely upon the disposition, taste and education of the dairy-man.

The greatest amount of care and skill with which the factory operator may do his work, will not enable him to make a superior quality of butter or cheese, or to secure the largest yield of it from milk which is not in good condition.

The superiority of the improved breeds of hogs consists to a very considerable extent in their increased power of assimilation and in their improved conformation enabling them to carry more flesh in the parts of their frame where high priced cuts are found, and a decrease in offal and low-priced meat.

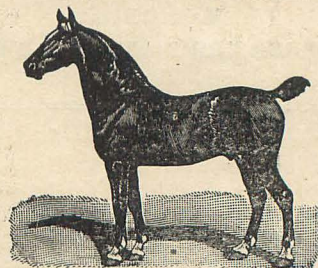
### FLAX SEED AND MEAL FEED

Will flax seed meal with a little sulphur, three tablespoonfuls, and the

### HELP BOOST NORTH DAKOTA

Warranted to Give Satisfaction.

## Gombault's Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

## Begin 1911 Right Improve your stock

Aberdeen Angus Cattle  
White Holland Turkeys  
White Plymouth Rocks

EASTGATE BROS.

Willobank Farm Larimore, N. D.



same amounts of pepper and same of salt in one-half bushel of meal, at three feeds a week make a mare throw her foal?

Grand Harbor D. Mc.

#### Answer

We do not believe that the addition of either flax seed meal, sulphur, or some pepper and salt to one-half bushel of meal, is liable to provoke abortion in mares, but we think that with the addition of the flax seed meal alone, your ration will be just as valuable as with the other ingredients added.

#### —Boots—

Question. Kindly give me information on the following: A dog here is supposed to have hydrophobia and if such is the case it is in that stage that it will be dead by tomorrow. Not quite a week before showing any signs of the disease it licked the hand of a person which was more than likely over little sores that were on the hand at that time. A kitten acted as tho it were bitten once when the dog snapped at it—that was just when he began to act queerly, four days ago, and this kitten scratched the person spoken of after it was bitten. Now in either case, is this person likely infected?

How long may it be after the infection that one can be cured at a Pasteur Institution? And is there such an institution at Grand Forks?

Enclosed find stamped envelop, and I ask for a reply by return mail if possible. I hope you will feel the thankfulness to you from a person in such a position for this I ask of you.

#### Answered by Veterinary Department

In reply to your favor of the 2nd inst., I beg to advise you that there is a possibility of a person becoming infected by the licking of a dog infected with rabies in the manner you describe, altho the possibility of infection must be considered a very slight one.

In the case of the scratch by the kitten the possibility is still less.

It is always advisable to send persons bitten by rabid dogs to a Pasteur Institute as soon as possible after the bite; otherwise any time before infection makes its appearance is advisable.

There is no Pasteur Institute at Grand Forks, but one is conducted in connection with the state board of health at Minneapolis in charge of Dr. F. F. Westbrook.

#### —No. Dak.—

Who is the State Veterinarian?

Does he charge for going to look at glandered horses?

What is a person allowed for horses that are ordered shot?

### ST. PAUL UNION STOCKYARDS COMPANY REPORT FOR MARCH

#### Comparison of Receipts and Shipments of Livestock

	Receipts						
	Railroads	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
C. R. I. & P...	152	84	833	97	38	23	
C. G. W.....	927	296	4086	893	25	105	
C. M. & St. P.	3860	1098	11126	1821	58	314	
M. & St. L....	2418	626	9547	672	20	233	
C., St. P. M. & O	2653	514	19005	1140	20	384	
C. B. & Q. ....	161	16	1798	248	.....	34	
M. St. P. & S. S. M	3374	1610	4862	1237	5	195	
Gt. Nor. ....	6143	3046	14887	3042	18	449	
Nor. Pac. ....	2805	884	2451	9027	41	171	
St. P. B. & T...	.....	.....	.....	.....	.....	.....	
Driven in....	440	47	422	1890	22	.....	
Total.....	22933	8221	69017	20067	247	1908	
Increase.....	6549	4569	11255	.....	.....	.....	
Decrease.....	.....	.....	.....	513	305	467	
Jan. 1 to date	44505	14982	172662	41764	446	4228	
Increase.....	13851	7709	49039	.....	.....	.....	
Decrease.....	.....	.....	.....	41469	445	922	
Average Wts.	793	162	213	101	.....	.....	

#### Shipments

C. R. I. & P...	1953	65	.....	448	1	59
C. G. W.....	2488	261	475	476	4	84
C. M. & St. P...	3932	119	16194	707	40	273
M. & St. L....	1664	60	391	.....	.....	49
C. St. P. & O...	1818	987	2148	5455	16	109
C. B. & Q. ....	2175	106	121	3819	.....	73
M. St. P. & S. S. M	259	21	150	199	12	17
Gt. Nor. ....	306	58	15	.....	25	14
Nor. Pac. ....	331	16	102	217	63	23
St. P. B. & T.	.....	.....	.....	.....	.....	.....
Driven Out....	413	183	244	47	27	.....
Total.....	15239	1876	19840	11370	188	701
Increase.....	8242	1343	4996	.....	.....	255
Decrease.....	.....	.....	.....	599	290	.....
Jan. 1 to date	26977	3342	49750	24196	374	1412
Increase.....	11556	2049	22095	.....	.....	326
Decrease.....	.....	.....	.....	36079	590	.....

#### Comparison of the Origin and Disposition of Livestock

##### Origin of Livestock Received

States	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
Minnesota	17318	7280	54514	9298	73	1456
Wisconsin ..	689	371	4458	463	49	95
Iowa.....	309	6	833	.....	62	30
Far South....	98	.....	.....	.....	.....	4
So. Dakota ..	1418	224	4662	1098	.....	119
No. Dakota ..	2922	339	4550	336	22	163
Montana.....	179	1	.....	8872	16	39
Far West....	.....	.....	.....	.....	.....	.....
Man. & N.W.T.	.....	.....	.....	.....	.....	.....
Far East....	.....	.....	.....	.....	.....	.....
Returned....	.....	.....	.....	.....	25	2
Totals.....	22933	8221	69017	20067	247	1908

##### Disposition of Livestock

So. St. P. P'k'rs	7804	5844	48916	11726	.....	.....
Cy. & St. Gutch.	862	188	1982	279	.....	57
Outside Pkrs.	.....	878	14301	476	.....	137
Minnesota...	1751	299	186	445	73	62
Wisconsin ..	851	3	73	91	9	33
Iowa.....	6059	401	885	448	3	190
Nebraska....	164	.....	115	.....	.....	5
Kans. & Mo...	474	.....	.....	.....	.....	12
So. Dakota ..	183	.....	.....	.....	12	6
No. Dakota ..	.....	.....	.....	.....	23	2
Mont. & West	11	.....	.....	.....	10	1
Far South....	.....	.....	.....	.....	.....	.....
Man. & N.W.T.	.....	.....	.....	.....	.....	.....
Mich. & E. Can	38	.....	.....	.....	9	2
Chicago.....	1402	9	.....	9631	.....	78

## HOLSTEIN CATTLE

THE MOST PROFITABLE DAIRY BREED

Illustrated Descriptive Booklets Free  
HOLSTEIN-FRIESIAN ASSOCIATION OF AMERICA  
F. L. HOUGHTON, SECY, BOX 135, BRATTLEBORO, VT.



The State Veterinarian for North Dakota is Dr. W. F. Crewe, Devils Lake, N. D.

Investigations for the presence of infectious diseases upon well grounded suspicion on the part of the owner are made free of charge by the State Veterinarian or his assistant.

In order to secure indemnity, the horses ordered killed are appraised by a board of appraisers appointed by the Justice of the Peace, but the indemnity cannot exceed \$50.00.

Question. How should grain be fed cattle?

Answer. Grain should be fed with roughage as then it goes into the first stomach and will be rechewed. If the grain is eaten alone it is apt to go to the third stomach and so miss the rechewing. To make sure that the feed is thoroly chewed feed it with roughage. The best way is to cut the hay or straw, mix the grain feed with it, then it will go thru the grinding process.

Question. What breed of cattle is suited to the conditions of Central North Dakota?

Answer. The Holstein-Friesian cattle commonly called Holstein have proven very popular in the state of North Dakota. The U. S. Government and the Experiment Station when selecting cattle for the breeding circuit at New Salem chose this breed as being best adapted to the conditions. The Johnston Farm and Stock Company of Marion are planning to have in the neighborhood of a thousand head of dairy cattle on their fourteen farms and already have two hundred, have also chosen this breed, which makes pretty good evidence that it must have special merit in North Dakota.

The Holstein is a popular breed all over the country, being second in number to the Jerseys. There are over 100,000 registered and the number is increasing very fast. No breed equals them in the quantity of milk given, tho it is not as rich in butter fat as that of the Jersey and Guernsey, yet the large quantity more than makes up for this smaller content of butterfat. In form the Holsteins are quite blocky so that the steer makes a fairly good beef animal and the calves are fine for veal. The Holstein can make better use of roughage than the Jersey or Guernsey, are hardy and can stand more hard usage than some of the other breeds, yet they are used to good care and respond to it very readily.

#### BEST GENERAL PURPOSE COW

Which is the best breed of cattle for the general purpose cow of the milking strain,—the Shorthorn or the Poll

Pass on the N. D. Farmer

Ills (ex Chicago)	3048	98	512	.....	.....	87
Eastern Pts.	396	.....	1786	.....	24	27
Returned.....	.....	.....	.....	.....	25	2
Totals.....	15239	1876	19840	11370	188	701

Durham, the red or the roan, and about what price should I pay for one of serviceable age?

Grand Harbor

D. M. C.

Answered by Prof. J. H. Shepperd

Replying to your correspondent D. M. C. I will say that the short-horn breeders have so long neglected the milk producing capacity of their cows, that they have little value for that purpose in general, at the present time. They are not resistant to milking propensities like the other strictly beef breeds but will not implant it if it is not present in the foundation stock on which they are crossed.

The Polled Durham breeders have made more of a point of milk production than the short-horn, but since the Polled Durham are a recent off-shot from the short-horn breed, and many of them at present eligible to registration in both the herd books, they cannot have made very great progress in that direction.

The red and roan color cannot be taken as distinguishing the character to much extent in their milking capacity.

The Cruickshank strain of short-horns, frequently called Scotch short-horns, were largely roan in color and were bred particularly for beef, and probably they have less of the tendency to milking propensities than any other of the short-horns. Some roans appear among all of the families, however, so that the color, as I said before, cannot be taken as much evidence.

D. M. C. does not say whether he expects to buy a grade cow or a full blood. I would expect a grade cow to cost from \$40 to \$50 and a registered cow of good type and capacity from \$100 to \$150.

Only **\$29<sup>75</sup>** and up

SENT DIRECT FROM FACTORY TO YOU, FREIGHT PREPAID.

Never before in Cream Separator history could you get a high grade Separator—with gears running in a "Bath of Oil"—the superior of any \$85 to \$110 Separator, at such a low, direct-from-factory price as I'll make you. Save \$25 to \$50 this way. I make and sell so many I can afford to make the price as low to you as dealers and jobbers have to pay in carload lots—spot cash—for other high grade Separators.

**TAKE 90 DAYS' FARM TEST OF A GALLOWAY "Bath in Oil" Separator**

Closest skimmer—Easiest running—Easiest to clean—No trouble oiling or danger of running dry like others, which alone is worth \$50 extra. Costs nothing extra on a Galloway. Send me your name today so I can write you my Special Proposition, at the price I'm making direct to farmers and dairymen, based on my output of 14,500 Galloways this year. I'll also send you my big BOOK FREE. Address—Wm. Galloway, Pres., WM. GALLOWAY CO. 1333 Galloway Station, Waterloo, Iowa

200 to 950 Pounds Capacity

### NORTH DAKOTA FARMER ONE YEAR FOR TEN CENTS

Send 10 cents and names of ten of your neighbors who do not take the NORTH DAKOTA FARMER and we will extend your subscription one year.

NORTH DAKOTA FARMER,  
Lisbon

### HELP BOOST NORTH DAKOTA

Caustic Balsam Does All  
You Can Ask of It.

We have sold Gombault's Caustic Balsam for years, and find that it gives thoro satisfaction.—FORD DRUG CO., Fairland, I. T.

### CENTRE-LANE STOCK FARM

BREEDER OF: Black Percheron and Hambletonian Horses, Red Polled Cattle, Poland China Hogs, White P. R. Chickens, White Holland Turkeys, White Embden Geese, White Pekin Ducks and White Guinea Fowls.

GROWER OF: Minnesota No. 169, Spring Wheat, Swedish Select Oats, White Hulless and Success Beardless Barley, Turkey Red Winter Wheat, N. D. 959 Winter Rye, Northwestern Dent Corn, Early Ohio Potatoes, Timothy and Alfalfa.

Young Stock and Pure Seed, for sale. Write me for particulars.

J. A. ENGLUND, Prop.

Kenmare, North Dakota.

## THE ENVILLA STOCK FARM

COGSWELL, NORTH DAKOTA

SHETLAND PONIES. 100 fine ones. Your own price.

REGISTERED ANGUS CATTLE. 25 must be sold.

HEAVY DRAFT STALLIONS, MARES, AND SPANISH JACKS.

WOLF AND FOX HOUNDS that will catch and kill.

PET STOCK OF ALL KINDS. PURE BRED POULTRY, all varieties.

We can please you both in Quality and Price

L. H. WHITE, Prop.

COGSWELL, N. D.



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One Cent a Word

Small advertisements will be classified under appropriate headings at the low price of one cent a word for each insertion. Cash must accompany all orders. Each initial or number must count as one word. TRY IT HERE.

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Percheron, Belgian and Shire horses  
J. W. & F. T. PETERSON, Litchfield, Minn.

MEADOWBROOK STOCK FARM. Clydesdales and Shetland Ponies, imported and home bred. Prices reasonable and terms to suit. Write or come and see me. GEORGE LANG, Mapleton, Minn.

## CATTLE

Aged and young Jersey bulls also heifers for sale—thoroughbred and registered. Write for particulars. C. E. BATCHELLER, Fingal, N. D.

North Branch Stock Farm. High class Short-horns. Herd, bull, Supreme Judge 177722—pure Scotch. John Donelly, Grafton, N. D.

## FOR SALE

## GALLOWAY CATTLE

J. W. & F. T. PETERSON, Litchfield, Minn

## SWINE

POLAND CHINA PIGS, also Shropshire sheep. Seed grain. GEO. N. SMITH, Amenia, N. D.

## EGGS AND POULTRY

EGGS FOR HATCHING. Express prepaid, \$2 per 15, from pure bred Golden Wyandottes and White Plymouth Rocks (Fishels strain.) Choice stock for sale. Send for Catalog. C. H. McGEE, Oriska, N. D.

## MISCELLANEOUS

Envilla Stock Farm, Cogswell, N. D. will quote you special prices on Angus Cattle, Shetland Ponies, Duroc Jersey Hogs, Wolfand Fox Hounds, Pure Bred Poultry, Pet Stock. Write them.

FAIRVIEW STOCK FARM. Breeder of Short Horn Cattle, Mammoth Bronze Turkeys and B. P. Rock Chickens. Young Stock for Sale.  
F. R. HAMMOND, Prop., Bismarck, N. D.

FOR SALE Six farms, joining, 6 miles from Bowbells, will be cheap. Write for particulars. The Lyon Land and Loan Co., Bowbells, N. D.

100 Tons of Hay, 300 Cockerals and Tom Turkeys—choice ones. Buy now—special prices. Envilla Stock Farm, Cogswell, North Dakota

## RED-POLLED AND GALLOWAYS

## Shropshire Bucks

J. S. BIXBY, - - LISBON, N. D.

WANTED. We want a salesman in every town in North Dakota to sell our high grade line of Forest and Fruit Trees, etc. Write us for terms. NORTH DAKOTA NURSERY CO., Flasher, N. D.

FARMS FOR RENT OR SALE ON CROP payments. J. MULHALL, Sioux City, Ia.

MEADOW LAWN FARM has for sale, high-class, Percheron Horses, Shorthorn and Polled Durham Cattle. Everything guaranteed as represented. Prices and terms most reasonable. Call or write your wants.

A. H. White, Kramer, N. D.

WANTED. Positions by two young men as gasoline traction engineers. Address E. FABER, Peoria, Ill.

## HELP BOOST NORTH DAKOTA

## Poultry Department

Geo. Hausmann, Hillsboro, N. D.

## A FEW POINTERS

Select the breeders from the largest layers of matured fowl.

The hen that lays a large number of eggs needs plenty of nourishing food.

Keeping the hen in clean surroundings is the best preventive of disease.

Alfalfa makes a great green food. Better try it if you are short of vegetables.

An understanding of how to breed and feed for profit is of great importance.

If a hen has to divide her time between laying eggs and fighting lice, she usually slights the former.

The male bird is half of the flock. A mistake in his selection is a mistake that reaches the whole seasons output.

April hatched chicks will make good winter layers.

Green cut bone helps along the egg and fertility records.

Don't forget to let your eggs for hatching stand at least twenty-four hours before incubating if received from any distance.

Let the fowls out doors as soon as the ground is free from snow. It will increase the yield of eggs and give better fertility and stronger chicks.

Don't neglect to dust the mother hen frequently with some lice-killing powder and to anoint the heads of the chicks with some prepared lice-killing ointment, lard or vaseline. The lice-killing powder will kill the lice on the hen and the ointment, lard or vaseline used on the chicks' heads will kill the big head lice which often cause serious loss.

When a boy we heard it said that a combination of grit, grace and gump-tion were highly desirable mental and moral qualities. Grit, grain and green-bone are not a complete ration but a pretty safe combination to tie to, in feeding poultry.

## A WORD OF CAUTION AS TO MATING

This subject has again and again been written about, and will no doubt find its way to the press, again and again. As often tho as it has been before the readers of different papers it is, and will be to their advantage to read it again. Poultrymen and farmers are not often provident. Many keep on breeding without a thought that they may have been breeding diseased fowls and before they know it their flock will be affected. It is simply due to their carelessness in mating. There are few, if any, poultry diseases that are not preventable. Let

me therefore give just one warning which has the greatest stress on mating.

"Healthy fowls will produce healthy chicks". In making this statement I do not mean to say that "Likes produce likes," but that likes are more apt to produce likes. If therefore we wish to produce healthy fowls we must begin with the parent stock. In order therefore that future generations of chicks may inherit only healthy tendencies we must be very careful about the selecting of our breeding stock. In selecting your breeders take only such that are and always have been healthy. Your breeders must possess full health, strength, vigor and maturity. No matter how good a specimen a bird may be, if he does not possess these qualities, bar him from your breeding yard.

A fowl which has once had a severe sickness is not to be used, and has no place in any breeding yard. Even tho he has apparently fully recovered, there is always a possibility that some taint remains that may be transmitted to the progeny. It has been found out by a good majority of poultrymen that much time can be wasted and money spent, by trying to cure diseased fowls. Furthermore than this, it has been found out to be the cheapest in the long run, to use the hatchet on all diseased fowls.

In the foregoing it will be noticed, that we wish to emphasize the fact, that only healthy fowls should be used. There are certain other points which need consideration in mating, but they are merely points which each and every bird ought to possess. Whereas, it is absolutely necessary to have healthy fowls, above anything else, to produce healthy chicks.

## SOME FACTORS IN WINTER EGG PRODUCTION

By O. W. Dynes

Chief among the factors effecting the egg production of hens during the winter months are: 1st, the strain of fowl; 2nd, proper housing; 3rd, method of feeding; 4th, care and management.

There is no best breed of fowls and one can suit his own individual taste in the selection of a variety so long as the choice falls upon one of the well-known standard breeds. Care should be taken, however, to procure a good strain within the variety. Only birds known to come from a vigorous, heavy laying, early maturing strain should be purchased.

North Dakotans Won't Down



Early hatched pullets are necessary for early winter egg production. One and two year old hens are not to be relied on to produce eggs in midwinter.

The right kind of housing is an all-important factor. The type of house giving the best result over the country is the curtain front house. Light ducking, heavy muslin or coarse burlap stretched on a wooden frame is placed in place of part of the glass windows that were formerly used to excess. This curtain is simply a new type of a ventilator. The old flue system of ventilation has proved inadequate. The North Dakota Experiment Station has recently published a press bulletin on the construction of a modern poultry house, a copy of which may be had for the asking.

North Dakota is primarily a grain producing state and because of this fact efficient and economical poultry rations can be easily provided. Wheat may constitute half of the grain ration and the balance oats and corn half and half

by weight. The hopper system of feeding the dry mash is being generally used as this method acts as a sort of a balance wheel to the grain ration. A simple dry mash may be made up of two parts of bran, two parts of shorts or middlings a bran, two parts of shorts or middlings and one part of beef scraps. The grain can be fed morning and evening in a litter of straw thus compelling the birds to take plenty of exercise in hunting for their food. Nothing should be fed that is musty or foul in any way.

Two much importance can not be placed on the general care of fowls during winter housing. Regularity of feeding and exacting care in every detail of management are prime requisites to success in handling laying fowls. The personal equation is an extremely important factor and no definite rule of procedure can be followed with an assurance of success in every case. Give the hen a square deal and she will amply reward you

**50 Best Paying Varieties** Pure-Bred Chickens, Ducks, Geese, Turkeys, Eggs, Dogs and Incubators. **All at Low Prices.** Send 4c. for my Book which gives reliable information worth many dollars to you **W. A. WEBER, Box 926 Mankato, Minn.**



## BARRED ROCKS

Choice Stock and Fair Treatment.

ROBERT B. REED

Box 2.

Amenia, N. D.

**White Crested Black Polish** Chickens, Eggs \$3.50 for 15, Chicks \$7.50 a pair.  
**J. R. POLLOCK, Casselton, N. D.**

## Partridge Wyandottes

"Hardi-breds," A breed

which combines good laying quality with the finest table quality, to say nothing of unexcelled beauty.

My birds are from the Hadaway flock direct and among them is a son of "Boston". They are blocky, well marked and of trap-nested ancestry.

Some stock for sale at reasonable prices. Eggs: \$3 per 15 or \$5 per 30. Cash with order.

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Breeders of W. Wyandottes and S. C. W. Leghorns  
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PURE WHITE WYANDOTTE Eggs for hatching \$1.50 for 15, \$7.00 for 100, \$14.00 for 220.  
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Prize winners' stock for sale. Eggs a specialty. **GEO. A. FOWLER,**  
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Thoroughbred, Wide Open Laced, Big Utility Birds, Bred for Business. Tested Fertile Eggs for Hatching, 15 \$1.50; 30 \$2.75; 45 \$4.00; 100 \$8.00. Satisfaction Guaranteed.

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**WHITE WYANDOTTE** eggs for sale from good stock.

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## POULTRY BRED FOR LAYING

See my big circular before you place that order for eggs. It will please you. It's free, 2 cent stamp for mailing.  
Mrs. B. F. Wilcox, Hillsdale, Wyo.  
Dept. 5.

**WHITE AND BUFF WYANDOTTES** that always win. Choice stock for sale. EGGS for hatching from pens of well-selected stock, sure to produce winners. Prices reasonable. Satisfaction absolutely guaranteed. Write me your wants.  
**L. O. CUMMINS, Casselton, North Dakota**

**FOR SALE.** M. B. Turkey Toms, raised from our Diploma Stock, \$5.00 and up; also Eggs from 26 varieties poultry. Catalog free.  
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Eggs for sale, \$2 for 15 eggs.  
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**125 Egg Incubator and Brooder Both For \$10**

Why pay more than our price? If ordered together we send both machines for \$10.00, and pay all the freight charges. Hot water, double walls, dead-air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery underneath the egg-tray. Both Incubator and Brooder shipped complete, with thermometers, lamps, egg-testers—all ready to use when you receive them. All machines guaranteed. Incubators are finished in natural colors showing the high grade lumber used—no paint to cover inferior material. If you will compare our machines with others offered at anywhere near our price, we will feel sure of your order. Don't buy until you do this—you'll save money. It pays to investigate the "Wisconsin" before you buy. Send for the free catalog today, or send in your order and save time.

**WISCONSIN INCUBATOR CO., Box 63, Racine, Wis.**

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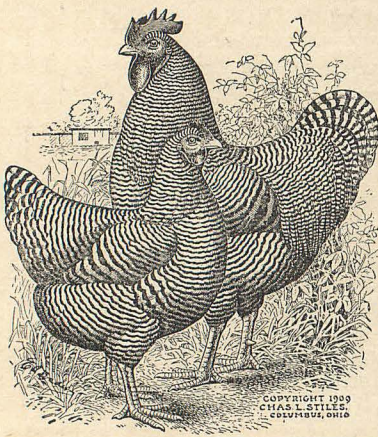
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100 Choice Birds for sale.

Prices on single Birds or Pens on application.

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Barred, Buff and White Rocks, Buff and White Dots  
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Seventy Prizes at State Shows

Forty Splendid Cockerels for Sale, \$2 to \$5. Eggs \$2 per 13

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**Patronize the NORTH DAKOTA FARMER Advertisers by sending for their literature and then study it. It may save you money. No fakes or frauds admitted to the columns of the N. D. Farmer. Your MONEY'S WORTH on page 2.**



# Seeds, Trees and Gardens

C. B. Waldron, N. D. A. C., Editor.

## GROWING FLAX ON NEW LANDS

By. H. L. Bolley

The high price of flax seed and of its various by-products, associated with the effects of the great drouth which has occurred in the flax seed growing regions of cropping to flax one of extreme interest.

The short crop of 1910 was, in part, due to the excessive drouth and in part to the very intense action of the root diseases of flax under drouth conditions. The drouth not only cut down the yield on new land where clean and properly

blights, but it is only of late years that investigations have been such as to demonstrate that plant diseases infesting the soil are the chief causes of the rapid deterioration in flax yields on new lands.

It is the history of the flax crop, that on new lands it at first is a success, but that after comparatively few crops the yield rapidly falls until it is no longer profitable. Farmers have usually assumed that the soil is depleted chemically, that some necessary chemical element is removed and many noted agriculturists have claimed that flax cropping is hard on the soil, injuring it for



Some Young Farmers

treated seed was sown, but on those lands which were infected by root diseases, it practically eliminated the crop.

Many of the finest fields that were to be seen growing during this season also suffered severely by early frosts. In most cases, the flax was late on these fields, not because the farmers had sown too late, but because the condition of the seed bed prevented germination until rain fell.

This very drouthy year, therefore, should not be taken as an index as to what can be done with flax in the future. And, now that we know most of the causes which have brought about the rapid deterioration of the crop on new lands, there is no reason why flax seed growing should not prosper in a manner not previously possible. It was long known that flax is subject to rust and

other crops. These beliefs, I believe, have been disproved. Flax is not particularly hard upon the soil, but the methods of cropping have usually been careless and of such nature that the soils speedily become infected by flax parasites, which destroy the plants.

These considerations make the questions as to what to do in order to grow flax on new lands and upon old lands of the greatest importance.

**Essentials of Flax Cropping:** (1) The first essential in flax cropping is to clearly appreciate that the diseases which bring about deterioration of the crop are transferred from field to field primarily by the seed, but often by the blowing of dust from infected flax lands, by drainage waters, by plows, harrows, threshing equipments, infected manures, etc. It is, therefore, of first importance that careful methods of preventing soil in-

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The largest grower of pure Alfalfa Clover, Timothy, Red, Alsike and Mammoth Clovers. The kinds the gentleman farmer and the farmer who respects his lands wants to sow on account of their absolute purity, namely 99.80 and 100 per cent. growth. The kind America's famous agriculturist, Ex-Gov. Hoard, of Wisconsin, endorses, sows and praises.

### Salzer's Seed Catalog Free

It's the most original seed book published, bristling with seed truths, and is mailed free to intending purchasers. Or remit 10c in stamps for 10 pkgs. remarkable farm seed samples, including our famous Alfalfa, Billion Dollar Grass, Speltz, etc.

JOHN A. SALZER SEED CO.  
215 So. 8th Street LaCrosse, Wis.

## HELP BOOST NORTH DAKOTA

### Strawberries From Seed

RIPE FRUIT IN 4 MONTHS

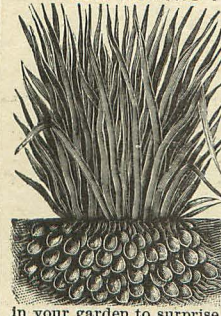


This Wonderful Everbearing Strawberry is a great curiosity. It grows rapidly, and will begin to fruit in about 4 months after sowing seeds, and continues to bear fruit constantly all summer and fall, 1/2 pint of berries having been picked from one plant as late as October. Seeds sown in the house in winter will produce early fruiting plants which will bear until late in fall, and if taken in the house will fruit all winter. Plants perfectly hardy everywhere. For only 10c we will send 100 Everbearing Strawberry Seeds in a 10c Rebate Envelope and when empty envelope will be accepted as 10c payment on any order for seeds in our 1911 Catalogue, which is included Free.

SMITH BROS. SEED CO., Box 637, AUBURN, N. Y.

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A few Ground Almonds (Chufa) growing in your garden this year will give you a great deal of pleasure. Plant in Spring and you will get a crop in about four months. The nut is of fine flavor, resembling the coconut or almond; meat is snow white; shell thin, and great producer. One nut planted will produce from 100 to 200 nuts. Will grow in any soil or location. To get new customers to test our seeds we will mail 50 Ground Almond nuts and 1911 Seed Catalogue with 10c. Due Bill, all for 10 cents. Send today and have something

In your garden to surprise your neighbors.  
MILLS SEED CO., Box 600, Washington, Iowa.

## 10,000 SEEDS 10c.

We want you to try our Prize Seeds this year and have selected 50 best varieties and put up 10,000 seeds especially to grow Prize Vegetables and Flowers. They will produce more than \$25. worth of Vegetables and 10 bushels of Flowers.

800 Seeds Cabbage	3 Best Varieties	3 pkts.
2,600 " Lettuce	4 " "	4 " "
800 " Onion	2 " "	2 " "
1,000 " Radish	4 " "	4 " "
300 " Tomato	3 " "	3 " "
2,000 " Turnip	4 " "	4 " "
2,500 " Flowers	30 Grand Flowering Varieties	

In all 10,000 Seeds, and our new Seed Book with a 10c Credit Check good for 10c selection, postpaid, 10c. FAIRVIEW SEED FARMS, Box 122, Syracuse, N. Y.

**FISH'S NORTH DAKOTA TOMATO**, bred in and for our climate. Unsurpassed in earliness and quality. Good size, Prolific. 100 seeds 25 cents.

S. E. FISH, VALLEY CITY, N. D.

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Mention the North Dakota Farmer when answering advertisements.



fection should be followed every year by all growers. Unless farmers are willing to persistently make every effort to prevent the introduction of the root-killing diseases into the soil, there can be very slight hopes of retaining the flax crop as a permanent element of agriculture in any community.

(2) The next essential rests in proper crop rotation and proper seed bed formation.

#### Preparing New Lands for the Sowing of Flax

If the seed is to be placed on new breaking, best results usually follow spring plowing. The seeding should be done as soon as possible after the plow. The moist earth and compact seed-bed gives a rapid first growth and the crop is usually comparatively free from weeds. If the land is broken in the fall, it is apt to be filled with any of those weed seeds which may be blown and tumbled by the winter winds, and these plants make strong competitors with the flax on newly broken areas, unless special provision is made for destroying them before seed time.

**How to Proceed in Spring Breaking:** Break the sod as deeply as can be done and yet have the furrow slices lie flat. The plow should be followed immediately by a heavy roller or some similar soil packing tool. The large corrugated type of metal rollers or clod crushers do a splendid sort of work on new breaking, tending to loosen the dirt from the masses of grass roots. A good roller for such work can be made at home by the use of concrete. The roller should be followed by a peg-toothed harrow, drawn parallel with the furrow slices, the harrowing being done to further loosen the dirt sufficiently to fill the spaces between the furrows and to furnish cover for the seed. The drill should immediately follow the plow, roller and the harrow, placing the seed into the moist, firm seed-bed thus prepared. Follow the drill immediately by a heavily weighted float or stone boat or roller, drawn over the surface to level, firm down the soil, and cover the seed.

If the work of plowing is done with a heavy traction plowing rig, all of these operations can be done at one time. This gives great advantage to the flax over any method of planting which separates the plowing, rolling, harrowing and covering processes, because the seed falls at once into the moist ground, while if the operations are conducted separately, the soil tends to dry out rapidly. If the operations are done separately, they should follow each other as soon as possible. Even though each implement is drawn by separate power, the order of work should be as nearly immediate as possible, and the seeding should be done immediately following the last harrowing.

An attempt should be made to have the drill place the seed down one-half to one inch, not deeper than one inch nor less than one-half inch. Before sowing, careful attention should be given the selection of the seed. Poor, scaley, diseased seed is what is ruining the crop of flax, and destroying the usefulness of the land for future flax purposes. Scaley and shrivelled seeds are mostly caused by the wilt and canker diseases, and are usually sure signs of the presence of such diseases.

No matter how plump and brightly colored the seed, there are apt to be wilt spores present. This is due to the fact that the disease is very general, and only a few sick plants produce an enormous number of spores which rattle off of the dead straws at threshing time and stick to the seeds.

Clean all seed thoroly so as to remove all sticks, dirt, chaff and scaly seeds. Then treat the seed with formaldehyde as described in our press bulletins Nos. 3, 14, and 23. It is absolutely essential in raising flax to disinfect the seed. It is not difficult to do, if the man who does it is provided with a proper compressed air sprayer so that he can throw a fine misty spray upon the grain while it is being shovelled and raked over. Use 1 pound of formaldehyde to each 40 gallons of water and approximately one-half gallon for each bushel of dry clean seed. If the grain is thoroly shovelled and raked while the spraying is being done the grain will be found to be evenly damp all over. If left piled for from one

to two hours it will be found fit to pass thru the drill without difficulty.

Those who do not properly treat their seed not only spoil their own chances for good crops but spread these destructive soil diseases to neighboring lands.

Sow not to exceed one-half bushel of good flax seed per acre. If it all sprouts there will be plenty of young plants. It is not wise to sow any flax seed which will not sprout at once.

CHOICE ALFALFA seed that has stood our winters and drouth for more than 20 years; for farmers' price and samples, write J. L. Maxon, Buffalo Gap, South Dakota.

## NEW SEED OATS

### Big Money in Oats



New Seed Oats. Big money in oats if you raise the right kind. Here's your chance to get them. Imported Canadian Seed Oats for sale; extra fine. Send for free sample. It speaks for itself. This same oats we sold last year in the United States and proved their merit and our statement that the farmers need a change of seed in this country. We make a specialty of growing extra fine seed oats on our big Canadian farm; new, clean land; no weeds. Have best known varieties. Regenerated Swedish Select went 116 bushels to acre this year; Early New Market, Canada's favorite, 110 bushels to acre. Both of these are big, early yielders. We absolutely know from experience it will pay you to get a change of seed. Try some of these oats. The average oats are inbred and run out. Canadian Government Grain Inspector graded this grain No. 1 White. Harvested straw, white berry, thin husk, enormous yielder. It is as easy to put in and harvest a big crop as a small one. The reason your oat crop is not bigger is because your seed is run out. This has been proven. Look at this cut. Taken from photograph of two stalks from Galloway Brothers' field, over 200 kernels to the stalk. Write early for free sample, or send ten cents each for packet of one or both kinds. Will also send you free booklet entitled "Big Money in Oats and How to Grow Them," by Galloway Bros. and Prof. M. L. Bowman, former professor of farm crops Iowa Agricultural College. Information in this book is priceless. Get it free. Resolve to start a seed patch on your high-priced land this year. The book tells you how.

GALLOWAY BROS.-BOWMAN CO.,  
Galloway Station, Waterloo, Iowa.

## From Nursery to Planter

We offer to the planters of North Dakota a complete line of FRUIT and FOREST TREES adapted to this climate and soil.

### WE GUARANTEE STOCK TO LIVE

OUR Plums, Cherries, Currants, Gooseberries, Willows and Poplars are the best you can buy.

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WE have a limited amount of two-year old Asparagus, Rhubarb and Horse Radish, well-rooted and fine.

### ONCE A CUSTOMER, ALWAYS ONE

Let us quote you prices on any amount of stock you may need.

## North Dakota Nursery Co.

Box 162

Flasher, N. D.



**Study Crop Rotation:** Any rotation of five or more years will do wonders for flax cropping, but it will be wise to introduce at least one grass and one cultivated crop in the series.

Remember that uneven depths of planting gives uneven ripening and that a firm seed bed will allow you to get an even depth of planting. A firm seed bed helps to protect the roots of the young plants from drouth and disease.

—Boost—

#### EARLY TOMATOES

One way to secure ripe tomatoes early is to start them in the house in March or early in April. Secure several gallon tin cans. Melt the seams open and tie cans together. Fill with garden soil. Transplant one tomato plant into each can. As soon as possible set plants outside either in a place that can be protected during the night or bring them in at night.

About June 1st set out in the garden, first removing the can. If the plant has been out in the open air a good deal of the time it will be hardy and will grow right along. Pinch the branches back to force plants to produce fruit instead of leaves.

—No. Dak.—

#### PEDIGREE SEED GRAIN AND HOW TO OBTAIN IT

By Supt. W. R. Porter

Nearly all the Government Experiment Stations have one or more scientific men who devote their time to producing new varieties of grain superior to the old varieties generally grown. The Minnesota Experiment Station originated the Minn. No. 169 blue stem.

The Illinois Experiment Station took a variety of corn and by selecting, thru a period of several years, obtained four varieties, two of which had a high and low oil content and two of which had a high and low protein content. These varieties were very different from the parent stock and each one is more valuable for certain purposes than the parent stock.

The North Dakota Experiment Station has also originated several new or pedigree varieties of grain, among which the North Dakota No. 155 flax, N. D. wilt proof flax, N. D. No. 871 Manschuri barley and N. D. No. 939 winter rye, are perhaps the best known.

These varieties of pedigree seed grain have been distributed to the farmers in small lots, generally not exceeding five bushels. Many farmers have rapidly increased their supply of seed so obtained and have sold seed to their neighbors, but the great majority soon let the fine pedigree varieties so obtained get mixed with other grain. Many sell their crops to the elevators instead of

supplying their neighbors. In some cases unscrupulous seedmen would sell large quantities of common seed grain as pedigree seed grain. The great majority of seedmen, however, would not be guilty of such practice. In a short time any new variety originated at great expense of time and labor would become practically lost. The experiment station farms are entirely too small to produce these grains in pure form in very large quantities. The twenty-four demonstration farms, however, make this quite possible, as only pedigree seed is used upon them and they produce the same crops each year, only on different plots in the rotation. Since the demonstration farms were established, the North Dakota Experiment Station has been able to produce pedigree seed grain in reasonably large quantities for

seed purposes as well as originate new pedigree varieties in the plant nursery of the station itself. In order that the seed so grown shall reach the farmers in pure condition the station has begun cleaning and sealing pedigree seed grain in two bushel sacks with a lead seal containing the name and number of the variety of seed contained within the sack. When a farmer receives a consignment of pedigree seed grain from a demonstration farm with the seals unbroken he is absolutely sure he is getting the kind of seed he orders.

A bushel of barley, oats, or flax will produce an abundance of seed for the average farm in from two to three years if grown exclusively for seed purposes as described for wheat. Under such circumstances is there any excuse for growing impure scrub varieties of grain?

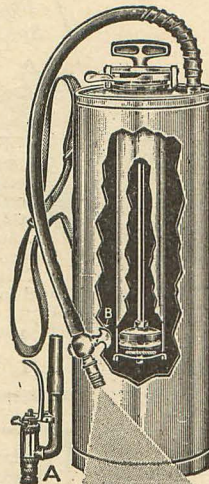
## Brown's Auto-Spray No. 1

The Only Practical  
Compressed Air Sprayer

Declared by Agri. Col.  
"Absolutely O. K."

Fully Warranted

More than  
250,000 in Use



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Write for descriptive literature

SAVE YOUR  
Trees, Plants and  
Vegetables

Insects, Worms and Fungi  
are Enemies

Don't Wait

The Bugs are Ready  
Are You?

For sale by **Hubert Harrington** Fargo, N. D.

## GALLOWAY SAVES YOU \$50 to \$300

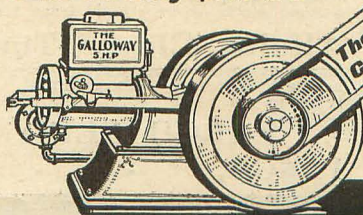
SAVE from \$50 to \$300 by buying your gasoline engine of 1½ to 28 H.P. from a real engine factory. Save dealer, jobber and catalogue house profit. No such other as I make on the class of engine I sell has ever been made before in all Gasoline Engine history. Here is the secret and reason: I turn them out all alike by the thousands in my enormous modern factory, equipped with automatic machinery. I sell them direct to you for less money than some factories can make them at actual shop cost.

All you pay me for is actual raw material, labor and one small profit (and I buy my material in enormous quantities).

Anybody can afford and might just as well have a high grade engine when he can get in on a wholesale deal of this kind. I'm doing something that never was done before. Think of it! A price to you that is lower than dealers and jobbers can buy similar engines for, in carload lots, for spot cash.

An engine that is made so good in the factory that I will send it out anywhere in the U.S. without an expert to any inexperienced users, on 30 days' free trial, to test against any engine made of similar horse-power that sells for twice as much, and let him be the judge. Sell your poorest horse and buy a

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FREE GASOLINE BOOK**

Write today for my beautiful new 50-page Engine Book in four colors, nothing like it ever printed before, full of valuable information, showing how I make them and how you can make more money with a gasoline engine on the farm. Write me—

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1335 Galloway Station, Waterloo, Iowa**



## INSTITUTES SCHEDULED FOR N. D.

Valley City, March 15th and 16th.  
 Enderlin, March 16th.  
 Kensal, March 17th.  
 Carrington, March 18th.  
 Sherwood, March 20, P. M. and Evening sessions; March 21, A. M. session.

—No. Dak.

## THE DICKINSON SUB-EXPERIMENT STATION

The third annual report of the Dickinson Sub-experiment Station is just from the press. It gives the results of the year's work, the first being the subject of alfalfa. This work is carried on in cooperation with the U. S. Department of Agriculture, and is the largest alfalfa experiment in the United States. In the work on hardiness the Grim alfalfa seems to have had the best of it. Attempts were made to cross the alfalfa with sweet clover, but success has not yet been obtained.

A number of experiments have been carried on with clover—one in testing out methods of fertilization. Under field conditions 54% of the flowers produced seed. When the plants were under control with bumble bees in the cage 45% of the blossoms were fertile. Where there were butterflies and moths in the cage of the plants 2½% produced seed and where all insects were kept away 9% of the blossoms were fertile.

In trials with wheat the heaviest yield, 27.3 bushels, was secured with the Kirka. The experiment with winter wheat on fallow ground and stubbling it in resulted in a yield of 18 bushels on barley stubble—while on the bare fallow it went from 4½ to 23 bushels, depending upon the protection. Of oats, the heaviest yield was 46 bushels of the Kherson. Of barley, the best yield, 35½ bushels, was secured with the Hannchen.

In the seeding tests with the different amounts of seed, varying from 53 to 129 pounds, the best yield of Durum Wheat was secured with seeding 111 pounds, the best yield of oats with seeding 78 pounds.

Early Bird potato gave a yield of 142½ bushels. In a trial of planting large and small potatoes, large potatoes gave a yield of 162½ bushels, while small tubers yielded 89 bushels.

One surprising result is that corn yields less on summer-fallow than when following corn.

For the years 1908 to 1910 the average yield of wheat on spring plowing has been 22.8 bushels; on fall plowing

20.4, and on summerfallow 32 bushels. During the same period, oats yielded 45.4 bushels on spring plowing; 39 on fall-plowing and 59.7 on summerfallow.

A series of three-year rotations have given the following average income per year:

2 years small grains, 1 year summerfallow	\$14.00
2 years small grains, 1 year corn	18.00
2 years small grain, 1 crop of corn manured	20.75
Wheat alternating with summerfallow	12.50
Wheat continuously, fall plowing	15.60
Wheat continuously, spring plowing	16.25

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NORTHERN GROWN SEEDS.

"Northern Grown Seeds" The Nation's Encyclopedia of Big-Value Seeds at Low Prices, Now Sent Free for the Asking

Don't buy seeds anywhere at any price until you have consulted this Valuable Book! The products raised from May's Seeds have a reputation on the country's gardens and farms as the best in the world! Vegetables, plants, bulbs, fruit and trees. All the good things for the garden and farm are included in this book of tremendous bargains—the prices are right.

This book is worth money to gardener and farmer because it saves them money! Don't delay—get the book by return mail. A postal brings it FREE. Write today to

L. L. MAY &amp; CO.

St. Paul, Minn.

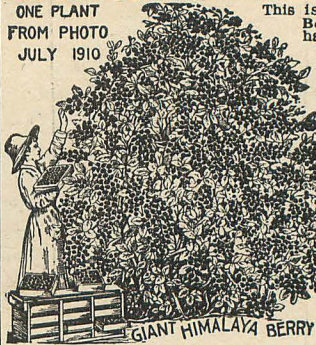
The bulletin also contains a number of charts giving the moisture content under the different field conditions. A report is also made on tree and fruit growing.

Copies of this bulletin can be secured by writing to Supt. L. R. Waldron, Dickinson, N. D.

## WHAT 10c BRINGS YOU---P. 16

## Greatest Of All Berries

ONE PLANT FROM PHOTO JULY 1910



This is the Greatest Berry the world has ever known, discovered in the Himalaya Mountains. Its growth and productivity is simply marvelous. It is perfectly hardy everywhere and grows from 30 to 60 feet in a season and can be

trained on arbors or trellises of any kind. The Engraving shows one Plant from photo July 1, 1910, which is trained to a large trellis loaded with fruit, and continued bearing until October.

The Fruit is black, almost coreless and the large luscious Berries borne in enormous clusters will literally melt in your mouth. It is unsurpassed for eating fresh, cooked, canned or preserved in any form and is the Greatest of all Berries for all Climates.

Everybody can and will grow this Great Berry for it is the easiest Fruit in the world to grow, is splendid for city people or any one with limited space, for it can be trained up from the ground like a tree producing Berries from 3 to 4 months, growing larger and producing more Fruit each year.

We guarantee this the Greatest of all new Fruits and can produce facts no one can get away from.

Beware of imitations. Giant Himalaya is a family by itself and highly valued wherever grown. The English Himalaya or Plants raised from seeds cannot be relied upon for fruit or hardiness. Our plants are from tested parent stock. Complete satisfaction guaranteed.

Instructions for cultivation with a booklet of receipts for using in many ways free with all orders.

Strong plants 30c each, 3 for 60c, 6 for \$1.00, 15 for \$2.00, 25 for \$3.00, postpaid.

Our 1911 Catalogue of Vegetable and Flower Seeds, Plants and Rare New Fruits free with every order. MILLS SEED HOUSE, Box 45, ROSE HILL, N. Y.



Let Us Help You Start an Orchard

Apple Trees

AT 6c to 20c EACH

SHADE TREES, EVERGREENS, SMALL FRUITS, FLOWERING SHRUBS and BULBS. FARMER SEED & NURSERY CO., FARIBAULT, MINNESOTA

### Save HALF by Buying Direct from the Grower

Why pay tree agents 100 per cent additional to the grower's price? Why pay their livery, traveling and hotel expenses? We cut this out—give you the benefit and furnish you better trees—all the leading N. W. varieties, with perfect fibrous-root system, grown on our immense nursery.

Write to-day for our new Seed and Nursey Catalog, which will tell all about our big seed farms and nursery, with wholesale prices on ORNAMENTAL

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Kiln Dried Selected and Tested

The best seed corn we have ever offered. It pays to plant the best and that is what you get when you buy from us. Order today—the supply is limited. We have a good stock of very high grade seed wheat, oats and barley.

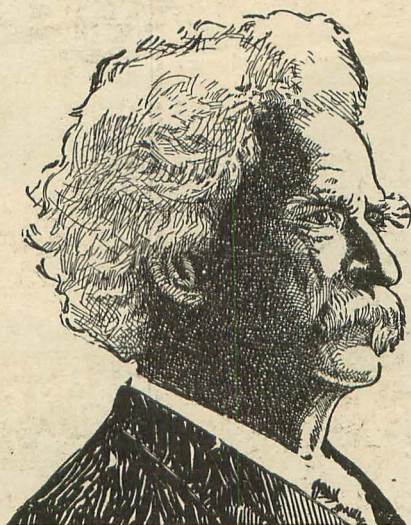
Alfalfa, Clover, Timothy and grass seeds are scarce this year, but our stock is the very highest test and will prove their worth when harvest time comes. Your order should not be delayed if you want good seed. Send today for our 1911 seed catalog. It is free to you.

FARGO SEED HOUSE, Dealers in strictly high-grade seeds FARGO, - - - NORTH DAKOTA

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There are beautiful pictures by such artists as Frost, Newell, Smedley, Thulstrup, Clinedinst, Kemble, and Oppen. The binding is in rich red rep silk book cloth, with title labels stamped in gold. The books are printed on white antique wove paper, especially made for this edition. Each volume is of generous size and bulk, 5x7½ inches.

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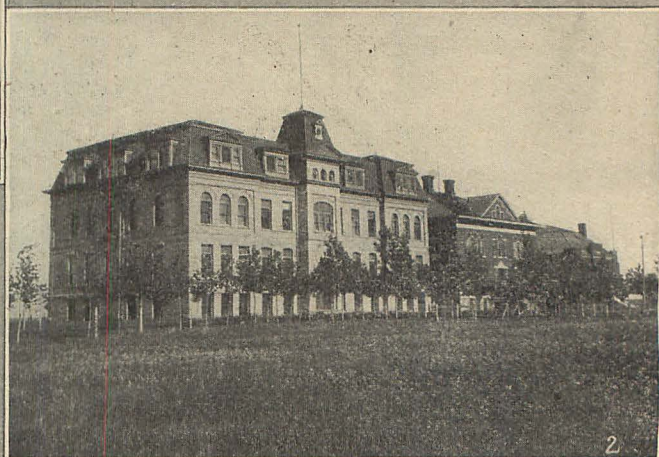
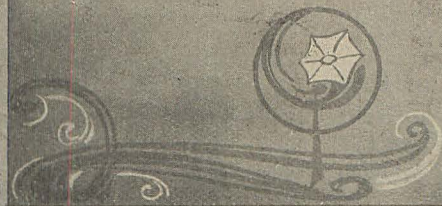
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Normal-Industrial School at Ellendale

## Home Department

### THE PUPPY

The Puppy cannot mew or talk,  
He has a funny kind of walk,  
His tail is difficult to wag,  
And that's what makes him walk zigzag.

He is the kitten of a Dog,  
From morn till night he's all agog—  
Forever seeking something new  
That's good, but isn't meant to chew.

He romps about the Tulip bed,  
And chews the Flowers white and red,  
And when the Gard'ner comes to see  
He's sure to blame mama or me.

One game that cannot ever fail  
To please him is to chase his tail—  
(To catch one's tail, 'twixt me and you,  
Is not an easy thing to do).

If he has not a pretty face,  
The Puppy's heart is in its place.  
I'm sorry he must grow into  
A Horrid, Noisy Dog—aren't you?

—Oliver Herford, in Harper's Mag.

### THE SCHOLAR IN AGRICULTURE

Five years ago the popular advice to those who were studying agriculture in colleges could have been summed up in the words "back to the farm." The fear was that scientific training would create a taste for teaching and for investigating at the expense of a taste for practical farming. But now all that is changed and farming has become so profitable that the fear is not that men will abandon farms for professorships, but that they will desert professorships for farms. The cry today is "Back to the colleges and experiment stations and out on the road in the interest of agricultural extension."

There were thirty-eight graduates in animal husbandry at the Iowa State college this year, and thirty-three of them chose to go back to the farm. Sixteen were offered positions in high schools at salaries of from \$1,000 to \$1,200, and all refused. Twelve were offered positions in colleges at salaries of from \$1,000 to \$2,000, and only four accepted.

But educated men on the farm know the value of expert advice, and the result is a greater demand for teachers and experiment station workers than the agricultural colleges can meet. This need has led the Association of American Agricultural Colleges and Experimental Stations to establish a movable school for advanced instruction in agriculture.

The school is known as the Graduate School of Agriculture. It met in 1902 at Ohio State university, in 1906 at the University of Illinois, in 1908 at Cornell, and in July, 1910, at the State College of Agriculture and Mechanic Arts at Ames, Iowa. It admits to membership only those who have taken a college degree in agriculture, but, in spite of this restriction, more than 150 students were enrolled this year. They came from the North and the South, the East and the West, from thirty-eight states and territories, from Canada, Cuba, Denmark, Russia and the Transvaal.

The story of what may be called the awakening in agricultural education was told by Dr. A. C. True, director of experiment stations and dean of the Graduate school, in his opening address. The statistics gathered in his office at Washington show that 220 positions in agricultural



colleges and stations have been created since 1907, and that 330 other institutions have introduced courses in agriculture.

It is the custom of the Graduate school to invite one or two distinguished foreign scientists to lecture at each of its sessions. This year those who came from abroad were Dr. E. Von Tschermak, lecturer on plant breeding in the Royal Imperial Agricultural College of Austria, and Dr. J. C. Ewart of the University of Edinburgh.

Among Americans on the faculty were Dr. Webber of Cornell, whose success in breeding hardy varieties of oranges is taking the terror of a freeze from Florida; Dr. MacDougal of the Carnegie desert laboratory at Tucson, Ariz., who is making arid

lands bud and blossom by acclimatizing plants to them; Dr. F. L. Stevens of the North Carolina Agricultural college, whose researches in plant pathology have been of immense economic value to market gardeners; Dr. Castle of Harvard, Dr. Armsby, director of the Institute of Animal Nutrition of Pennsylvania State college, and Dr. Butterfield of Massachusetts, a member of President Roosevelt's country life commission, who declares that "to maintain upon the land a class of people who represent the best American ideals in their industrial success, in their political influence, in their intelligence and moral character, and in class power," is the American rural problem. This problem the Graduate School of Agriculture is doing much to solve.—Collier's Weekly.

in the above and add ginger to make soft ginger bread.

#### Angel Cake

One and one-half cupfuls sugar, 1 cupful flour, 1 teaspoonful cream tartar. Sift all together 5 times. Whites of 12 eggs beaten very stiff. Add slowly while beating flour, sugar and cream tartar. Bake from 35 to 50 minutes in a tube pan.

#### Dark Layer Cake

Two cupfuls dark brown sugar,  $\frac{1}{2}$  cupful butter, 2 level teaspoonfuls of cinnamon,  $\frac{1}{2}$  cupful sour milk, 3 eggs, 2 cupfuls flour, 1 level teaspoonful soda, 1 teaspoonful cloves and  $\frac{1}{4}$  teaspoonful salt. Bake in layers, using boiled frosting between.

#### Scalloped Corn

One can corn, 2 cupfuls cracker or bread crumbs. Sprinkle layer of cracker crumbs in buttered pan; then layer of corn sprinkled with salt, pepper and bits of butter, then add another layer of crumbs and corn until material is used, last layer must be crumbs. Pour on  $1\frac{1}{2}$  pints sweet milk and bake in oven 30 minutes.

#### Mock Fried Oysters

To 1 can of corn add 2 well-beaten eggs, 1 teaspoonful salt, a little pepper and flour enough to make a thin batter. Mix thoroly. Have a pan hot, and place in it 1 teaspoonful each of butter and lard. Put in corn by spoonfuls and fry a delicate brown. Tastes like oysters.

#### Kitchen Hints

Put into a mason jar all bits of toilet soap too small for other uses. Pour in alcohol enough to cover soap. This will make a jelly for hands, bath and hair. Before using, add a few drops of perfume.

Never allow meat to remain in paper. It absorbs the juice.

To remove ink stains, apply lemon juice and salt and lay in the sun, repeating if necessary.

To clean a coffee pot after washing: fill with water and add a tablespoonful of baking soda. Let boil an hour or two on back of stove.

To remove egg stains from silver, rub with damp table salt or wash in potato water.

Turpentine will remove paint from garments.

Salt toughens meat, if added before it is done.

After baking a cake stand the tin immediately on a cloth which has been rung out of cold water. Leave a few minutes and the cake will come out easily.

For variety try mingling some grated cheese with your potatoes when slicing for escalloping.

**When you write an advertiser tell him you saw his card in the North Dakota Farmer.**

## Seasonable Receipts

*Selected from "One Thousand Receipts for North Dakotans"*

#### Graham

Make sponge of white flour as for white bread, let rise, when light add 1 pint of water,  $\frac{1}{2}$  cupful of brown sugar, 1 tablespoonful of salt. Knead almost as firm as white bread, using about  $\frac{1}{2}$  white flour and  $\frac{1}{2}$  graham; use more graham if liked. Let rise and put into loaves when light. Do not mix it down again when light for it is apt to sour. This is excellent.

#### Oatmeal Bread

One cupful buttermilk, 2 tablespoonfuls melted butter,  $\frac{1}{4}$  cupful sugar, 1 teaspoonful soda dissolved in milk, 2 cupfuls flaked oats, 1 cupful flour. Bake 40 minutes in moderate oven.

#### Baking Powder Biscuits

One quart flour, 2 heaping teaspoonfuls Royal baking powder,  $\frac{1}{2}$  teacupful lard, sweet milk to soften; stir with spoon. Do not knead.

#### Cream Biscuit

One quart flour, 2 teaspoonfuls Royal baking powder, 1 of salt, cream enough to moisten. Roll out and bake quickly.

#### Egg Salad

Boil 6 or 7 eggs for about 10 minutes; cool in water; carefully remove the shells; cut in slices and put on a salad dressing.

#### Cabbage Salad

Chop very fine crisp cabbage; add sugar, salt, pepper and celery salt to suit taste, a dash of red pepper; mix with cabbage; pour over vinegar to moisten well, beating all the time with a silver fork; add thick sweet cream and beat until it froths.

#### Cabbage Salad

Chop a cabbage fine. Take  $\frac{1}{2}$  or  $\frac{3}{4}$  cupful of sweet cream, beat stiff; add 2

or 3 tablespoonfuls vinegar  $\frac{1}{4}$  cupful sugar and mix with the cabbage.

#### Cabbage Salad Dressing

1 egg  
1 tablespoonful flour  
1 teaspoonful mustard  
 $\frac{1}{4}$  teaspoonful salt  
1 teaspoonful sugar  
 $\frac{1}{2}$  cupful vinegar  
Pepper to taste

Let boil and cool, then add  $\frac{3}{4}$  or 1 cupful either sweet or sour cream; mix with fine-chopped cabbage.

#### Salad Dressing

This salad dressing may be used on vegetables, fruits or meats.

1 teaspoonful salt  
1 teaspoonful mustard  
2 teaspoonfuls sugar  
1 scant cupful of vinegar  
1 tablespoonful butter  
3 tablespoonfuls cream  
4 yolks of eggs

Mix and stir over the fire until it begins to thicken; strain. When ready to use, thin with  $\frac{1}{2}$  cupful of cream, whipped.

When wishing to keep this salad dressing for some time, I omit the 3 tablespoonfuls cream and add the cream only when I am ready to use it, usually taking  $\frac{1}{2}$  cupful cream to  $\frac{1}{2}$  cupful dressing. Make this when you make an angel cake.

#### Sour Cream Cake

One cupful thick sour cream, 1 cupful sugar, 1 egg,  $\frac{1}{2}$  level teaspoonful soda, a little salt,  $1\frac{1}{2}$  cupfuls sifted flour, flavor to taste. A cupful of powdered sugar mixed with water makes a nice frosting. Substitute molasses for sugar



## THE IMPLEMENT BLUE BOOK FREE

The Midland Publishing Co., St. Louis, Mo., has left over a few hundred copies of the 1910 Implement Blue Book, one of which it offers to mail, free of charge, to any subscriber to this paper who will send 20 cents to pay the postage, packing, etc. The book has 527 Royal Octavo pages, weighs two pounds and contains complete classified lists of all farming implements, vehicles, wagons, automobiles and kindred goods, made in the United States, with names and addresses of manufacturers; also a full list of all branch, jobbing and transfer houses in this country and Canada, from which near-by shipments may be had. Much other information of great value to farm people is also contained in book which originally sold for \$3.

## GOOD ROADS LOOKING UP

"No subject is engaging the attention of state legislators at the present time in a greater degree, probably, than road improvement," said Logan W. Page, Director of the Office of Public Roads, in speaking of the steady advance in "good roads" sentiment. "More than half the states have adopted the principle of state aid and supervision over all or part of the roads, while the remaining states are seriously considering sweeping reforms in the road laws.

"Probably the greatest problem now before highway engineers is to save from the destructive action of the automobile the macadam roads already built at great cost and to devise a method of construction which will successfully withstand the effects of such traffic in the future. The efforts of the Office of Public Roads, as well as of highway engineers generally in this country and in Europe, have been directed, first, toward obtaining a preservative and binder which may be applied to the surface of roads already constructed, rendering them dustless and forming a bond of sufficient strength to withstand motor traffic; second, toward ascertaining the most suitable binder or binders to be incorporated with the other materials so as to produce a dustless road powerfully bonded; and finally, toward keeping the cost within reasonable limits.

"Experiments have been made with asphalt, tar, and various other bituminous binders, waste product from sugar refineries, sulphite liquors from pulp mills, and with various palliatives, such as oil emulsions, calcium chloride, light oils, etc. The experiments have in many cases been successful, and the problem seems to be resolving itself more into one of reduction in cost by the development of local materials and methods."

# Mayer

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**Mayer Work Shoes are made to meet the demand of all classes of working men. They are made solid and are absolutely dependable under all conditions. They fit good and look good and will outwear other work shoes at the same price because they are made of specially selected tough, seasoned stock, choice uppers, heavy soles, solid counters, double leather toes and double rows of stitching.**


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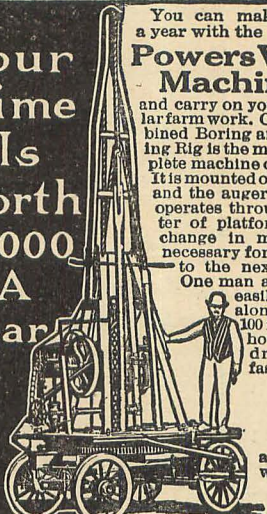
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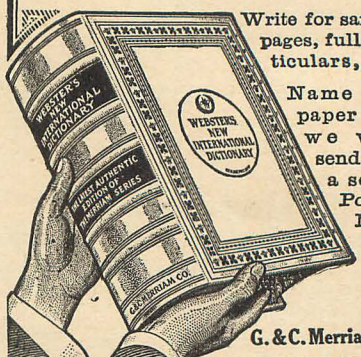
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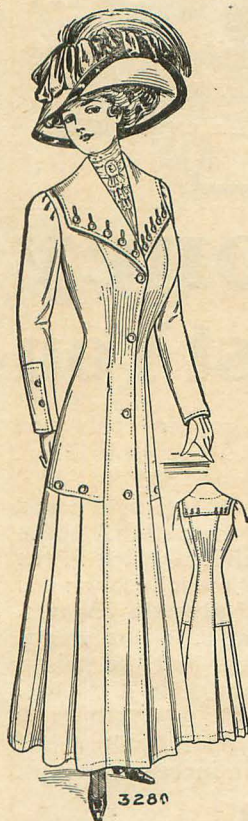
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IF YOU HAVE A \$ SEE PAGE 2

You can't afford to miss one copy of the North Dakota Farmer—renew at once.



## HOME DRESSMAKING



No. 3280—Ladies' Long Coat, having a plaited skirt, large collar in square or rounded outline and two seamed sleeves with or without extension. Sizes 32, 34, 36, 38 and 40 inches bust measure. Size 36 requires  $5\frac{1}{2}$  yards 54 inch material. Price, 15 cents



A nightgown with high neck and long sleeves is preferred by the majority of women for cool weather. Such a design is here illustrated in No. 3450 made of pink-dotted, soft-finish cotton resembling French flannel. This material is known under various names. It is excellent for winter and early spring for children or others who desire a soft, warm material for nightgowns. The same design can be used for nainsook, cross-barred batiste or dimity and some of the dainty flowered lawns that are fancied for this purpose. The pattern is also perforated for low neck and short sleeves. The sizes are 32, 36, 40 and 44 inches bust measure and the medium size requires 6 yards of 40-inch material with  $2\frac{1}{2}$  yards of edging.

A dainty Empire nightgown is shown in No. 3459. The front and sleeve-caps are made of embroidered flouncing and ribbon is used to draw it in as required. The back may also be cut from all-over embroidery which will add to the daintiness of the gown. Or it will be attractive made of nainsook or linen with the edges simply buttonholed, scalloped and having embroidered dots above them. The gown is made to slip on over the head and the skirt is attached to the short body with a narrow belt of insertion. Pattern sizes are for 32, 36 and 40 inches bust measure and the medium size requires  $4\frac{1}{4}$  yards of 36-inch material with  $4\frac{1}{4}$  yards of embroidery 15 inches wide and narrow insertion the length of the belt.



No. 3366—Child's Set of Short Clothes, consisting of a Dress with front and front yoke in one piece and one-seamed sleeves in full or elbow length; and a single-breasted coat having large collar and one seamed sleeves with turn

back cuffs. Sizes  $\frac{1}{2}$ , 1, 2 and 4 years. Size 2 years requires one and seven-eighths yards 40 inch material for dress and  $1\frac{1}{4}$  yards 44 inch material for coat. Price, 15 cents.

Dress trimmed with embroidery design 11336 and coat with 11337. Perforated stamping patterns, 20 cents each.

## Do Your Buildings Need Paint?



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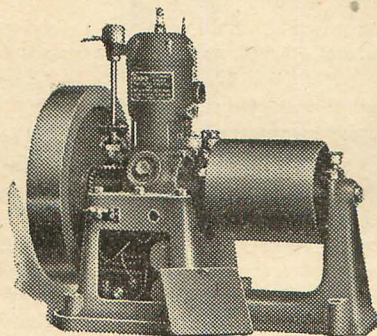
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No. 3646—Ladies' Long Coat. Having shawl collar and two-seam sleeves with turn-back cuffs. Sizes 32, 34, 36, 38 and 40 inches bust measure. Size 36 requires 30 yards 54 inch material. Price, 15 cents.



No. 3311—Girls' Loose Coat, having two-seamed sleeves with turn-back cuffs. Sizes 6, 8, 10 and 12 years. Size 8 requires two and one-eighth yards 54 inch material. Price, 15 cents.

THE NORTH DAKOTA FARMER will supply its readers with perfect fitting seam allowing patterns from exclusive Paris designs—at the given price for each pattern. For ladies upper garments give bust measure, for skirt and under garments waist measure. For misses and children give age and size. All patterns are guaranteed a perfect figure.

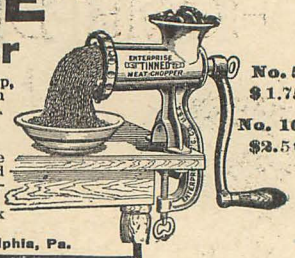
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# Save the Money that Gophers Cost You



Every gopher costs you at least 10 cents to keep.

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is far better than strychnine or any other poison. Strychnine is very insoluble and a great quantity of water must be used to dissolve it and a great amount of grain must be added, to absorb the liquid mixture. Thus its strength is so reduced that it takes an average of 20 grains to kill one gopher. But, as strychnine is excessively bitter, only about one-third of the gophers eat enough of it to kill them. So an ounce of strychnine which should cost \$1.00 kills only 874 gophers as compared to 2,000 killed by 75c. worth of Kill-Em-Quick. My money-back guarantee protects you.

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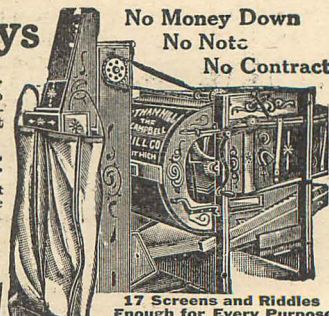
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## Elementary Agriculture

McNeal. C. James, Editor

### Seeds of Farm Crops

Poor or diseased seeds of ordinary farm crops, probably are a greater loss to the farmer than any other factor over which he has control. The United States Department of Agriculture and most of the State Experiment Stations have found that there is a great difference in the power of seeds to grow, and in the amount of impurities in them.

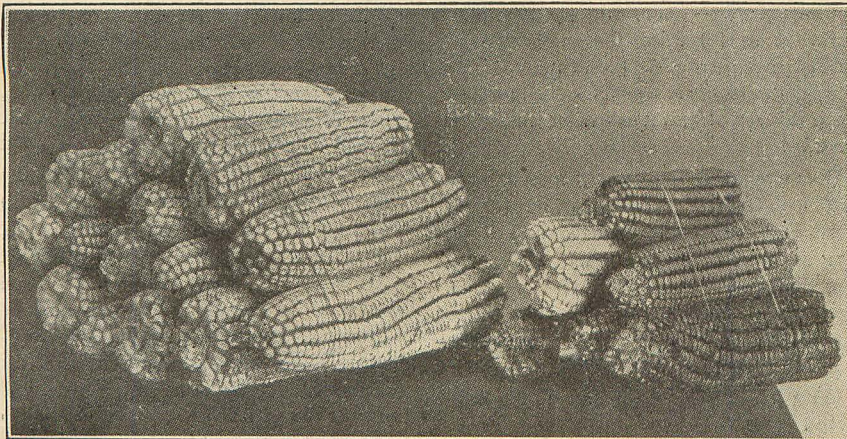
For example 3,322 ears of corn were tested for germinating powers from 24 states and 67 counties in those states. These ears were taken from the seed corn the farmers had gathered for seed. Ten kernels were taken from each ear.

The high grade samples showed the following:

Live red clover seed	96.55%
Other seeds	85%
Price paid per 100 lbs.	\$15.05
Actual cost per 100 lbs.	15.58

If farmers sow seeds low in vitality they may lose the part or the whole of a crop. This means a loss of the ground for a year, the loss of much labor in preparing the ground, and if the seed is costly seed like that of alfalfa or clover, he loses much in the way of money paid for seed. Seeds which are to be planted should possess the following qualities:

1. Vitality, the power to grow.



### Two Ways of Selecting Seed. Which Pays?

1416 ears germinated 100%. The other 1906 ears averaged 77.7%. The average test of all ears was 86.3%. Of course the poor ears were not used for seed, this means that 13.7% better stand was obtained than would have been if the test had not been made. Based upon the average yield of corn in this country, and upon the average price for the last ten years, this increase of yield would mean an increase of \$100,736,912.91, if all the corn was of the same quality tested.

Again, an examination of 61 samples of low grade clover seed imported into this country in one year showed the following composition:

Red clover seed	74.06%
Other seeds	12.17%
Dirt and broken seeds	13.83%
Live clover seed in sample	43.16%
Price paid per 100 lbs.	\$ 7.61
Actual cost per 100 lbs. based on percentage of good seed	20.39

2. Purity, free from weed seed or any other foreign matter.
3. Freedom from disease, as smuts.
4. Of known variety.

In order to learn the vitality of seeds a germination test should be made. For ordinary cereal grains, grasses, or garden vegetables, the plate test is practicable. This can be done as follows: Take an ordinary dinner plate or pie plate; place about an inch of sand or other soil in the bottom; on this place a piece of blotting paper or cloth, cut so as to fit inside the plate. Count out a hundred seeds of the variety to be tested. Place them on the blotter; lay a second piece on the seeds; dampen well and place a second plate over the whole thing in an inverted position. Keep in a warm room at a temperature of 60 to 70 degrees and keep damp, never having any more water on it than will remain when the plates are turned up edgewise. The sand and the blotters are merely to hold the moisture.

When seeds are to be tested it is very

## The Farmer's Son's Great Opportunity



Why wait for the old farm to become your inheritance? Begin now to prepare for your future prosperity and independence. A great opportunity awaits you in Manitoba, Saskatchewan or Alberta, where you can secure a Free Homestead or buy land at reasonable prices.

### Now's the Time

—not a year from now, when land will be higher. The profits secured from the abundant crops of Wheat, Oats and Barley, as well as cattle raising, are causing a steady advance in price. Government returns show that the number of settlers in Western Canada from the U. S. was 60 per cent larger in 1910 than the previous year.

Many farmers have paid for their land out of the proceeds of one crop. Free Homesteads of 160 acres and pre-emptions of 160 acres at \$3.00 an acre. Splendid climate, good schools, excellent railway facilities, low freight rates; wood, water and lumber easily obtained.

For pamphlet "Last Best West," particulars as to locations and low settlers' rate, apply to Sup't Immig., Ottawa, Can., or to Can. Gov. Agt.

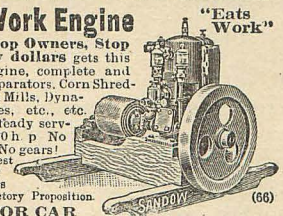
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Grand Forks, N. D.

(55)

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### "Kennewick on the Columbia"

The choicest spot in the early fruit belt. Home of the early strawberries, grapes, apples and all kinds of fruit. We have more land than we can farm, and offer 10-acre tracts of fine irrigated fruit land adjacent to the city for sale. Reasonable price and terms. If desired, will plant orchard for buyers. Write us if interested. **Meadow Brook Farm Co., Kennewick, Wash.**

When you write an advertiser tell him you saw his card in the North Dakota Farmer.

**LIMITED! Special Offers, Page 2**



important that the sample be a representative one. Hence one should take some of the grain from different parts of the lot, and from this large sample take the smaller one. When corn is to be tested, individual ears should be used. Directions for making these tests can be found in the references given below.

There are certain things which tend to affect the vitality of seeds. By giving attention to these the farmer can often grow very good seeds for planting. These are:

1. Condition of weather at time of harvesting.
2. Condition of grain at time of harvesting.
3. Age of seed.
4. Method of storing.
5. Condition of parent plant.

If a hard freeze should come before the corn was dry it would be seriously injured. If the weather is wet while wheat stands in the shock, it often starts to sprout. This injures its power to grow. When seeds are cut too green they are not as strong as when allowed to get ripe. The seeds of several farm crops lose their vitality after they are two years old, such as wheat, flax, corn and millet; while other seeds retain their power to grow for five or six years as squash, cucumbers, and beets.

If grain is stored in a damp condition it is liable to heat in the bin. This lessens its vitality very much. All seed grains should be stored in a dry condition and kept dry. A weak plant almost never produces seeds with as strong vitality as a vigorous plant does. Hence seeds should be selected from healthy plants as far as possible.

When seeds contain impurities it means a smaller stand, for one sows dirt instead of seeds. If weed seeds are present, very injurious weeds may be introduced in the field, which are often exceedingly hard to get rid of. Nearly every injurious weed which is giving the farmers of this state trouble, was introduced in seeds sown.

In order to find out whether a sample of seeds contains weeds or other impurities, the seeds should be carefully examined by placing some on a piece of white paper and spreading them out in order to see the small weed seeds. A small hand magnifying glass is a great aid in this work. All cereal grains should be thoroly cleaned by running them thru a good fanning mill. This will usually clean them of most of the injurious weed seeds, as some very good mills are now to be had. This also cleans out the light seeds which are liable not to produce vigorous plants.

Equally important to cleaning and testing seeds is that of treating them to destroy diseases such as flax wilt, or stinking smut of wheat. The life his-

tory of a type of these diseases may be found in our October articles; also references for the treatment to prevent diseases.

It is a well known fact that plants soon become accustomed to the kind of climate found in any section in which they grow. If the seeds of these plants be taken any considerable distance from that place, they do not grow as well. So it is often important to get seeds grown near at home. Our own Agricultural College has demonstrated the

fact that certain strains of wheat and flax are more suitable for this state, and more drouth or disease resistant than others. Hence it is important to give some attention to the pedigree of the seed.

#### References

- Year Book 1908. 204-277.  
Farmer's Bulletins. 229-253-260  
Cereals in America. Hunt. 197-201.  
Elements of Agriculture. Warren. 47-60.  
N. D. Bulletins. 55-68-79-87.

## OILS, PAINTS, AND PAINT PIGMENTS

### PAINT NOTES

It costs a great deal less to paint than it does to replace a building. Therefore why not paint?

The poorest paint on the market is often easily sold—once, and no man is so rich that he can afford to use cheap materials in painting his buildings.

Add twenty per cent to the cost of materials if you defer painting until you have to.

One way to make paint cover a large surface is to purchase a cheap quality of paint and continue to add linseed oil as long as there is any color left. We will not guarantee, however, the wearing qualities of such a paint. We have heard that good paint will cover twice as much surface as poor paint.

Why should not the barn be protected by a rain-coat—of paint?

Look behind the paint. There stands the manufacturer.

It requires as much character to manufacture paint as it does to give a square deal in buying wheat.

Now is the time for painting, tomorrow you will be at the drill or plow and it will be put off until the barn or house is a little more weatherbeaten, the cost of painting has been increased and the life of the building is accordingly shortened.

Do not expect a coat of paint to stick well on a surface that has been previously painted and has peeled, cracked or scaled off.

### AN ESTIMATE OF PROF. H. L. BOLLEY By "American Paint and Oil Dealer"

If that man is a benefactor who makes two blades of grass grow where but one grew before, what shall be said of the man whose efforts to save the whole flax-growing industry of the country from seriously threatened

extinction are being generally recognized as practical and already largely successful.

Our readers are familiar with this work for the betterment of flax cropping conditions, by the prevention of soil infection, the securing of proper crop rotation and seed bed formation, and the disinfection of the seed, for sowing. But a more personal glimpse of the man will gratify them—his port-sowing. Prof. Bolley frankly acknowledges that he is "from thirty to fifty years young," tho he is said to have been born in 1865, in Dearborn county, Ind., of English parentage. He was schooled in Indiana and Michigan and has been interested in plant work (agriculture in general, but plant diseases in particular) since his early youth, and his recognized ability and success in his work is largely due to his creed to work hard, or play hard all the time, except for necessary sleep.

He is the dean of the department of biology of the North Dakota Agricultural college and experiment station, also the state botanist and seed commissioner, and his frequent bulletins, and his contributions to such journals as "Science," the "American Naturalist," etc., constitute large part of the literature upon wheat and flax plant disease and resistance.

This constructive scientist and state official is intensely practical, and with his deep interest in the prosperity of North Dakota and its adjoining flax-growing states he has grasped that fact that the welfare of all the various manufacturing and industrial interests that are based directly or indirectly upon the American flax crop also rests largely upon the success and prosperity of the American flax grower. The crop must be made profitable to the farmer, and it must be of such extent and within such cost as will comfortably meet this country's requirements. That is the problem, and Bolley and his fellow farmers of the Northwest propose to solve it. They are solving it.



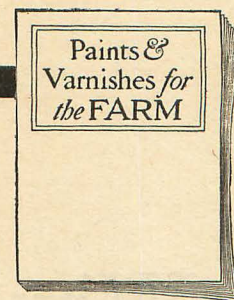
# Brighten Up



**N**OW is the time to "Brighten Up" the many things about the house that have become dingy, scratched and marred with use. Do it while house cleaning and save much of the extra labor. If your house or barn needs painting, don't put it off 'till next year. Paint it *now*. There's a

## SHERWIN-WILLIAMS PAINT OR VARNISH

for every surface you can think of, including the house, barn, implements, carriages, etc. Paint made for a particular purpose is sure to give better results than one that is claimed to be good for a variety of uses. Next time you paint go to the S-W agent in your town; tell him what you are going to paint and he will give you the finish that will do the work most satisfactorily. Write for agent's name in your town.



### This Valuable Book Sent Free

"Paints and Varnishes for the Farm" contains information that should be in your hands. It tells you why paints and varnishes are needed on your buildings and implements, when to apply, how to paint right, the amount necessary for the job, what to use on certain surfaces and how painting saves money. One hundred and fifteen pages of interesting and profitable reading *free* for the asking. Drop a post card today for a copy of this book.



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## Why "Mound City" House Paint HOLDS Its Gloss

**W**HY do you see so many dull,  
faded-looking houses?

The trouble with such houses is that they are Oil-hungry. They are painted with a paint that has not enough Linseed Oil in it—a paint that never *could* have enough Oil in it on account of the character of the pigments used.

The best Paint *must* do two things. It must preserve and beautify. Do you know that Linseed Oil is *the* great preservative in Paint and that if it were not for the sake of appearance, you could give your house a coat of pure Linseed Oil, and it would be protected?

The solid part of Paint (Strictly Pure White Lead, Strictly Pure Zinc, and, in some Paints, baser metals) acts as beautifier only.

Strictly Pure Zinc absorbs more Oil than any other pigment and that is the reason for its use in Horse Shoe Paint. WHITE LEAD is used for its covering qualities, and ZINC for its *Oil-carrying* capacity.

And Oil-carrying capacity is what your Paint *must have* if your property is to be protected.

Horse Shoe Paint, while it covers and beautifies the surface thoroughly, is made of pigments that carry so much oil, that the *first* coat satisfies the oil-hunger of the wood leaving the second coat to gloss, harden, protect, and beautify.

That's why Mound City Horse Shoe Brand House Paint HOLDS its gloss.

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